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CASE 2

1. ABC is beneficial when traditional overhead allocation results in inaccurate product costing. Wall Dêcor should investigate the product costing system because in order to sell the unframed prints the stores must mark them up only slightly above their cost, while the framed prints enjoy a large profit margin. Traditional overhead allocation often results in inappropriate overhead allocation when one product is a high-volume item (in this case, the unframed prints) and another product is a more complex, low-volume item (in this case, the framed prints).

Another indication that ABC would be beneficial occurs when company managers have begun to develop their own costing systems because they have lost faith in the traditional system. In this case, the production manager does not have faith in the company's costing system and instead has developed her own costing system.

2. The activity-based overhead rates can be calculated by dividing the estimated overhead associated with each activity by the expected use of the cost driver.

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CASE 2 (Continued)

Activity	Cost Driver	Estimated Overhead	Expected Use of Cost Driver	Activity-Based Overhead Rate
Picking prints	Number of prints	$ 30,600	(80,000 + 15,000 + 7,000) = 102,000 prints	$0.30 per pick
Inventory selection and management	Number of components: Print (1) Print and frame (2) Print, mat, and frame (3)	$ 91,700	Prints: 80,000 components Print and frame: 15,000 X 2 = 30,000 components Print, mat, and frame: 7,000 X 3 = 21,000 components Total = 131,000 components	$0.70 per component
Website optimization	Number of prints at capacity			
Unframed		$ 25,800	Unframed prints— 100,000 print capacity	$0.258 per print
Framed		$103,200	Framed or framed and matted prints— 25,000 capacity	$4.128 per framed or framed and matted print
Framing and matting	Number of components at capacity	$123,900	Print and frame: 16,000 X 2 = 32,000 components at capacity Print, mat, and frame: 9,000 X 3 = 27,000 components at capacity Total = 59,000 components	$2.10 per component
		$375,200		

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CASE 2 (Continued)

3.

Description	Lance Armstrong Print	John Elway Steel-Framed Print, No Matting	Lambeau Field Wood-Framed Print, with Matting
Direct materials			
Print	$12.00	$16.00	$20.00
Frame and glass		4.00	6.00
Matting			4.00
Total	12.00	20.00	30.00
Direct labor			
Picking			
([10/60] X $12)	2.00	2.00	2.00
Matting and framing			
([20/60] X $21)		7.00	
([30/60] X $21)			10.50
Total	2.00	9.00	12.50
Manufacturing overhead by activity			
Picking prints			
@ $0.30 per pick	0.30	0.30	0.30
Inventory selection and management			
@ $0.70 per component (1, 2, and 3)	0.70	1.40	2.10
Website optimization			
@ $0.258 per print	0.258	0.00	0.00
@ $4.128 per framed or framed and matted		4.128	4.128
Framing and matting			
@ $2.10 per component		4.20	6.30
Total	1.258	10.028	12.828
Total product cost	$15.258	$39.028	$55.328

4. In Case 1 the high-volume prints consumed the greatest amount of overhead because it was assumed all manufacturing overhead was driven by print cost combined with sales volume, regardless of the mix of unframed prints and framed prints. Since far more unframed prints were sold, most of the overhead was allocated to unframed prints.

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Under ABC, this changes. Although still based on estimates, ABC first provides an analysis of how resources were consumed by activity. Next, in the second step of allocation, activity costs are allocated to unframed prints and framed prints using different types of drivers. These drivers are designed to model how manufacturing overhead resources were consumed at the product level. For example, the last activity (framing and matting) is allocated to framed items only. The reason is that unframed prints do not consume framing and matting equipment, space, and general overhead resources.

The primary implication for the company is that the product costs will be more accurate, which will result in better product pricing and more accurate evaluation of the relative profitability of the products.

5. **There are some costs that are very difficult to allocate because it is difficult to determine a meaningful cost driver that captures differences across products. Time and resources dedicated to web optimization for an integrated system fall into this category. In this case, in order to reflect the significant difference between the amount of time spent on web optimization by the IT staff on unframed prints versus framed prints, the total cost of web optimization was first split between these two categories. Time of IT staff was used to subdivide the cost by resource consumption between unframed prints and framed prints. This allocation, although it may appear simple, is sometimes very difficult to accomplish in the real world. Once identified, management can see that much of IT's resources are being consumed by framed and matted items.**

6. **The advantage of ABC versus traditional predetermined overhead allocation is that ABC allocates costs based on the activities that generate those costs. This results in more accurate product costing. By breaking costs down into more refined categories, product costing will be even more accurate. However, having more categories is costly from a record-keeping perspective. Increasingly, there is an effort by ABC consultants to "keep it simple" so as to reduce the cost of implementing ABC. It is believed that many of the benefits of ABC can be attained with relatively simple systems.**

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7. By allocating fixed overhead costs using operating capacity as the basis, management can see how much, approximately, each item costs at capacity. Although this is somewhat arbitrary, it does provide a benchmark for comparability and improvement. The advantage is that management can manage costs based on a standard.

If expected sales volume is used to allocate fixed overhead costs, then the allocation rate will fluctuate as sales fluctuate. This reduces the usefulness of analysis across years and makes planning very difficult. In fact, it can result in a vicious cycle: As volume decreases, the fixed cost per unit goes up, so product cost goes up. In response, management raises prices (because the product cost has risen). When the price rises, volume falls even further, and the cycle starts over again. Keep in mind that costs must be controlled at the activity level. Therefore, an activity cost at a standard is what is necessary for measurement, resource allocation, and evaluation. By allocating based on capacity these fluctuations can be eliminated (as long as capacity doesn't vary). Therefore, the use of operating capacity for allocating fixed overhead costs can result in better decision making.

8. (a) The allocation of the overhead to the three product categories would be as follows:

Unframed prints

Activity Cost Pool	Expected Use of Cost Driver	Overhead Rate	Cost Assigned
Picking prints	80,000	$0.30	$ 24,000
Inventory selection management	80,000	0.70	56,000
Website optimization	80,000	0.258	20,640
Framing and matting	na		
Total			$100,640

Steel-framed prints

Activity Cost Pool	Expected Use of Cost Driver	Overhead Rate	Cost Assigned
Picking prints	15,000	$0.30	$ 4,500
Inventory selection management	30,000	0.70	21,000
Website optimization	15,000	4.128	61,920
Framing and matting	30,000	2.10	63,000
Total			$150,420

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CASE 2 (Continued)

Wood-framed prints with matting

Activity Cost Pool	Expected Use of Cost Driver	Overhead Rate	Cost Assigned
Picking prints	7,000	$0.30	$ 2,100
Inventory selection management	21,000	0.70	14,700
Website optimization	7,000	4.128	28,896
Framing and matting	21,000	2.10	44,100
Total			$89,796

(b) The total overhead allocated was $340,856, ($100,640 + $150,420 + $89,796). This is $34,344 less than the total overhead of $375,200. The overhead rates for website optimization and framing and matting were both determined using the capacity amount rather than the expected sales amount. The reasons for this were discussed earlier. Since expected/ actual sales were less than capacity, the overhead is underapplied. This cost of $34,344 can be viewed as the cost of operating at less than capacity. In order to reduce this amount, management should either figure out ways to increase sales or reduce fixed costs by shifting resources to other products.

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Chapter 2 – Weygandt Managerial 9e
Challenge Exercise Solutions

Solution
CE 2-1

(a)

Costs	Southside	Oceanview	Rocky Heights
Direct Materials	$ 5,450	$ 7,635	$ 6,480
Direct Labor	4,810	5,980	5,525
Operating Overhead (Landscaper hours x $60 per hour)	4,440 (74 x $60)	5,520 (92 x $60)	5,100 (85 x $60)
Totals	$14,700	$19,135	$17,105

(b) $14,700 (only the Southside account is incomplete)

(c) Operating Overhead

DEBIT	CREDIT
15,400 (Actual OH)	4,440 (applied)
	5,520 (applied)
	5,100 (applied)
340 balance	

Operating Overhead has a debit balance of $340.

(d)

Mountain Estates Bid
Estimated Costs

Direct Materials	$10,450
Landscaper Labor Costs**	8,125
Operating Overhead (125 hours x $60/hour)	7,500
Total Estimated Costs	$26,075

**Landscaper Labor costs are $65 per hour based on the jobs that Larry's Landscaping is currently working on.
(Southside $4,810/74 hours = $65 per hour; Oceanview $5,980/92 hours = $65 per hour; Rocky Heights $5,525/85 hours = $65). Landscaper labor hours for Mountain Estates will be $65 per hour x 125 hours = $8,125.

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Solution
CE 2-2

(a) Predetermined overhead rate = $780,000/39,000 = $20 per hour

(b) Applied overhead = $20 x 38,750 = $775,000

Work In Process……775,000
Operating Overhead……775,000

(c)

Actual overhead	$772,450
Applied overhead	775,000
Overapplied overhead	$ 2,550

(d) (1) If estimated overhead increases to $799,500, the predetermined overhead rate would change to: $799,500/39,000 = $20.50 per hour. This would increase applied overhead. The new amount would be $20.50 x 38,750 = $794,375.

(2) Actual overhead would not directly be impacted by a change in estimated overhead. However, the increase in estimated overhead indicates that actual overhead is expected to increase.

With the new amount of applied overhead, overhead would still be overapplied but in the amount of $21,925.

Actual overhead	$772,450
Applied overhead	794,375
Overapplied overhead	$ 21,925

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CHAPTER 2A

Job Order Costing

Learning Objectives

1. Describe cost systems and the flow of costs in a job order system.
2. Use a job cost sheet to assign costs to work in process.
3. Demonstrate how to determine and use the predetermined overhead rate.
4. Record manufacturing and service jobs completed and sold.
5. Distinguish between under- and overapplied manufacturing overhead.

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ANSWERS TO QUESTIONS

1. (a) Cost accounting involves the measuring, recording, and reporting of product costs. A cost accounting system consists of manufacturing cost accounts that are fully integrated into the accounting records of a company.

(b) An important feature of a cost accounting system is the use of a perpetual inventory system that provides immediate, up-to-date information on the cost of a product.

LO1 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

2. (a) The two principal types of cost accounting systems are: (1) job order cost system and (2) process cost system. Under a job order cost system, costs are assigned to each job or batch of goods; at all times each job or batch of goods can be separately identified. A job order cost system measures costs for each completed job, rather than for set time periods. Under a process cost system, product-related costs are accumulated by or assigned to departments or processes for a set period of time. Job order costing lends itself to specific, special-order manufacturing or servicing while process costing is better suited to similar, large-volume products and continuous process manufacturing.

(b) A company can use both types of systems. For example, General Motors uses process costing for standard model cars and job order costing for custom-made vehicles.

LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

3. A job order cost system is most likely to be used by a company that receives special orders, or custom builds, or produces heterogeneous items or products; that is, the product manufactured or the service rendered is tailored to the customer or client's requests, needs, or situation. Examples of industries that use job order systems are custom homebuilders, commercial printing companies, motion picture companies, construction contractors, repair shops, accounting and law firms, hospitals, shipbuilders, and architects.

LO1 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

4. A process cost system is most likely to be used by manufacturing firms with continuous production flows usually found in mass production, assembly line, large-volume, uniform, or relatively similar product industries. Companies producing appliances, chemicals, pharmaceuticals, rubber and tires, plastics, cement, petroleum, and automobiles utilize process cost systems.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

5. The major steps in the flow of costs in a job order cost system are: (1) accumulating the manufacturing costs incurred, (2) assigning the accumulated costs to Work in Process Inventory, (3) transferring the cost of completed jobs to Finished Goods Inventory, and (4) transferring the cost of jobs sold to Cost of Goods Sold.

LO1 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

6. The three inventory control accounts and their subsidiary ledgers are:

Raw materials inventory—materials inventory records.
Work in process inventory—job cost sheets.
Finished goods inventory—finished goods records.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

7. Disagree. Updates to Manufacturing Overhead are also made at the end of an accounting period. For example, there will be adjusting entries for factory depreciation, property taxes, and insurance.

LO1 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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8. The source document for assigning materials is the materials requisition slip and the source document for assigning labor is the time ticket. The entries are:

	Manufacturing Costs			Work in Process Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead	
Direct materials	–$XX			+$XX
Indirect materials	–XX		+$XX	
Direct labor		–$XX		+XX
Indirect labor		–XX	+XX	

LO2 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

9. The purpose of a job cost sheet is to record the costs chargeable to a specific job and to determine the total and unit costs of the completed job.

LO2 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

10. The source documents for charging costs to specific jobs are materials requisition slips for direct materials, time tickets for direct labor, and the predetermined overhead rate for manufacturing overhead.

LO2 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

11. The materials requisition slip is a business document used as an authorization to issue materials from inventory to production. It is approved and signed by authorized personnel so that materials may be removed from inventory and charged to production, to specific jobs, departments, or processes. The materials requisition slip is the basis for posting to the materials inventory records and to the job cost sheet.

LO2 BT: K Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

12. Disagree. Actual manufacturing overhead cannot be determined until the end of a period of time. Consequently, there could be a significant delay in assigning overhead and in determining the total cost of the completed job.

LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

13. The elements for computing the predetermined overhead rate are the estimated annual overhead costs and an expected activity base such as direct labor hours. The rate is computed by dividing the estimated annual overhead costs by the expected annual operating activity.

LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

14. At any point in time, the balance in Work in Process Inventory should equal the sum of the costs shown on the job cost sheets of unfinished jobs. Alternatively, posting to Work in Process Inventory may be compared with the sum of the postings to the job cost sheets for each of the manufacturing cost elements.

LO3 BT: K Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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Questions Chapter 2A (Continued)

15. When Manufacturing Overhead has a positive balance, overhead is underapplied. Underapplied overhead means that the overhead applied to work in process is less than the overhead incurred. When Manufacturing Overhead has a negative balance, overhead is overapplied. Overapplied overhead means that the overhead applied to work in process is greater than the overhead incurred.

LO5 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

16. Not correct. Under- or overapplied overhead is not eliminated by adjusting the cost sheets. If the balance in Manufacturing Overhead is positive, it is decreased and Cost of Goods Sold is increased. If the balance in Manufacturing Overhead is negative, it is increased and Cost of Goods Sold is decreased.

LO5 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 2A.1

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
(1)Purchase raw materials	+$XX					
(2)Incur factory labor		+$XX				
(3)Factory utilities			+$XX			
(3)Factory insurance			+XX			
(3)Factory repairs			+XX			
(3)Factory depreciation			+XX			
(3)Factory property taxes			+XX			
(4)Direct materials	–XX			+$XX		
(4)Indirect materials	–XX		+XX			
(5)Direct labor		–XX		+XX		
(5)Indirect labor		–XX	+XX			
(6)Assign manufacturing overhead			–XX	+XX		
(7)Completed jobs				–XX	+$XX	
(8)Sale of jobs					–XX	+$XX

(1) Purchase raw materials	(5) Factory labor is used
(2) Incur factory labor	(6) Overhead is applied
(3) Incur manufacturing overhead	(7) Completed goods are recognized
(4) Raw materials are used	(8) Cost of goods sold is recognized

LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2A.2

	Manufacturing Costs		
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead
Purchased raw materials	+$4,000		
Incurred factory labor		+$6,000	
Factory utilities			+$2,000
Balance	$4,000	$6,000	$2,000

LO1 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2A.3

	Manufacturing Costs			Work in Process Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead	
Balance from BE2A.2	$4,000	$6,000	$2,000	
Direct materials (From Jobs 1, 2 & 3)	–2,800			+$2,800
Indirect materials	–600		+600	
Balance	$600	$6,000	$2,600	$2,800

LO2 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2A.4

	Manufacturing Costs			Work in Process Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead	
Balance from BE2A.3	$600	$6,000	$2,600	$2,800
Direct labor (From Jobs 1, 2 & 3)		–5,200		+5,200
Indirect labor		–800	+800	
Balance	$600	$0	$3,400	$8,000

LO2 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2A.5

Job 1		
Date	Direct Materials	Direct Labor
1/31	$900	
1/31		$2,200

Job 2		
Date	Direct Materials	Direct Labor
1/31	$1,200	
1/31		$1,600

Job 3		
Date	Direct Materials	Direct Labor
1/31	$700	
1/31		$1,400

LO2 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2A.6

Overhead rate per direct labor cost is 180%, or ($900,000 ÷ $500,000).
Overhead rate per direct labor hour is $18, or ($900,000 ÷ 50,000 DLH).
Overhead rate per machine hour is $9, or ($900,000 ÷ 100,000 MH).

LO3 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2A.7

January $40,000 x 70% = $28,000

February $30,000 x 70% = $21,000

March $50,000 x 70% = $35,000

LO3 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2A.8

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
Balance				**$50,000**		
Completion of Jobs:						
Job 10				**–20,000**	**+$20,000**	
Job 11				**–30,000**	**+30,000**	
Job Sold:						
Job 10					**–20,000**	**+$20,000**
Balance					**30,000**	**20,000**

LO4 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2A.9

	Service Contract Costs			Service Contract in Process
	Supplies	Service Salaries and Wages	Operating Overhead	
Beginning balance		$36,000		
Assign personnel costs to projects		–36,000	+$8,000	+$28,000
Assign operating overhead to projects*			–7,000	+7,000
Ending balance		$0	$1,000	$35,000

***$28,000 x 25% = $7,000**

LO4 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2A.10

Shimeca Company

The adjustment will increase Cost of Goods Sold and decrease Manufacturing Overhead.

Garcia Company

The adjustment will decrease Cost of Goods Sold and increase Manufacturing Overhead.

LO5 BT: C Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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SOLUTIONS FOR DO IT! EXERCISES

DO IT! 2A.1

	Manufacturing Costs		
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead
(a) Purchased raw materials	+$18,000		
(b) Incurred factory labor		+$40,000	
(c) Factory utilities			+$3,100
(c) Factory property taxes			+2,700
(c)Factory depreciation			+9,500
Balance	$18,000	$40,000	$15,300

LO1 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

DO IT! 2A.2

The two summary entries are:

	Manufacturing Costs			Work in Process Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead	
Direct Materials	–$16,200			+$16,200
Direct Labor		–$12,000		+12,000

LO2 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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DO IT! 2A.3

The predetermined overhead for Washburn Company is:

$200,000 ÷ 2,500 hours = $80.00

The amount of overhead assigned to number 551 would be:

90 hours × $80.00 = $7,200

LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management
[($200,000 ÷ 2,500 hrs. = $80/hr.); (90 hrs. x $80/hr. = $7,200)]
[(Expected MOH ÷ Expected MH = Predet. OH rate); (Act. MH x Predet. OH rate = Applied OH)]

DO IT! 2A.4

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
Balance				**$120,000**		
Completion of Job No. 310				**–70,000**	**+$70,000**	
Completion of Job No. 312				**–50,000**	**+50,000**	
Sale of Job No. 312					**–50,000**	**+$50,000**
Balances				**$0**	**$70,000**	**$50,000**

LO4 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

DO IT! 2A.5

Manufacturing overhead applied = 130% x $85,000 = $110,500
Underapplied manufacturing overhead = $115,000 – $110,500 = $4,500

LO5 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management
[($85,000 x 130% = $110,500); ($115,000 - $110,500 = $4,500)]
[(Actual DL cost x Predet. OH rate = Applied OH); (Actual OH – Applied OH = Underapp. MOH)]

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SOLUTIONS TO EXERCISES

EXERCISE 2A.1

(a) & (b)

	Manufacturing Costs			Work in Process Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead	
(a) Incurred factory labor		$90,000		
(b) Direct labor*		–76,500		+$76,500
(b) Indirect labor**		–13,500	+$13,500	
Balances		$0	$13,500	$76,500

***$90,000 x 85% = $76,500**
****$90,000 x 15% = $13,500**

LO1, 2 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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EXERCISE 2A.2

(a) – (c)

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead		
(a) Balances	$15,000			$3,500	
(a) Incurred factory labor		+$13,700			
(b) Direct materials	–10,400			+10,400	
(b) Indirect materials	–800		+$800		
(b) Direct labor		–12,500		+12,500	
(b) Indirect labor		–1,200	+1,200		
(b) Assign Manufacturing overhead*			–7,500	+7,500	
(b) Completion of job No. 429**				–7,540	+$7,540
Balance	$3,800	$ 0	–$5,500	$26,360	$7,540

*$12,500 x 60% = $7,500
**$2,000 + $2,500 + $1,900 + ($1,900 x 60%) = $7,540

(c)

Job Cost Sheets

Job No.	Beginning Work in Process	Direct Material	Direct Labor	Manufacturing* Overhead	Total
430	$1,500	$3,500	$ 3,000	$1,800	$ 9,800
431	0	4,400	7,600	4,560	16,560
	$1,500	$7,900	$10,600	$6,360	$26,360

***Direct labor x .60**

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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EXERCISE 2A.3

(a) $15,200, or ($5,000 + $6,000 + $4,200).

(b) Last year 70%, or ($4,200 ÷ $6,000); this year 80% (either $6,400 ÷ $8,000 or $3,200 ÷ $4,000).

[Last yr.: ($4,200 ÷ $6,000 = 70%); This yr.: ($3,200 ÷ $4,000 = 80%)]
[Last yr.: (MOH cost ÷ DL cost = Predet. OH rate); This yr.: (MOH ÷ DL cost = Predet. OH rate)]
LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 2A.4

(a) + $50,000 + $42,500 = $145,650
(a) = $53,150

$145,650 + (b) = $201,500
(b) = $55,850

$201,500 – (c) = $192,300

(c) = $9,200

[Note: The instructions indicate that manufacturing overhead is applied on the basis of direct labor cost, and the rate is the same in all cases. From Case A, a student should note the overhead rate to be 85%, or ($42,500 ÷ $50,000).]

(d) = .85 x $140,000
(d) = $119,000

[($42,500 ÷ $50,000) x $140,000 = $119,500]
[From Case A: (MOH applied ÷ DL cost) x Case B DL cost = Case B MOH app.]

$83,000 + $140,000 + $119,000 = (e)
(e) = $342,000

$342,000 + $15,500 = (f)
(f) = $357,500

$357,500 – $11,800 = (g)
(g) = $345,700

[Note: (h) and (i) are solved together.]

(i) = .85(h)

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EXERCISE 2A.4 (Continued)

$63,150 + (h) + .85(h) = $213,000
1.85(h) = $149,850
(h) = $81,000
(i) = $68,850

(j) = $213,000 + $18,000
(j) = $231,000

$231,000 – (k) = $222,000
(k) = $9,000

LO1, 5 BT: AN Difficulty: Moderate TOT: 20 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 2A.5

(a) $2.40 per machine hour ($300,000 ÷ 125,000 MH).

(b) ($322,000) – ($2.40 x 130,000 Machine Hours)
$322,000 – $312,000 = $10,000 underapplied

[$322,000 – ($2.40 x 130,000) = $10,000 underapp.]

(c) The adjustment to assign the underapplied overhead to Cost of Goods Sold will decrease Manufacturing Overhead and increase Cost of Goods Sold.

LO3, 5 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 2A.6

(a) The source documents are:
Direct materials—Materials requisition slips.
Direct labor—Time tickets.
Manufacturing overhead—Predetermined overhead rate.

(b) The predetermined overhead rate is 125% of direct labor cost. For example, on July 15, the computation is $550 ÷ $440 = 125%. The same result is obtained on July 22 and 31.

($550 ÷ $440 = 125% of DL cost)
(July 15: MOH cost ÷ DL cost = Predet. MOH rate)

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EXERCISE 2A.6 (Continued)

(c) The total cost is:

Direct materials	$4,690
Direct labor	1,360
Manufacturing overhead	1,700
	$7,750

The unit cost is $3.10 ($7,750 ÷ 2,500).

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 2A.7

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
(1)Purchased raw materials	+$46,300					
(2)Direct materials	–29,200			+$29,200		
(2)Indirect materials	–6,800		+$6,800			
(3)Incurred factory labor		+$59,900				
(4)Direct labor		–54,000		+54,000		
(4)Indirect labor		–5,900	+5,900			
(5)Overhead costs incurred			+80,500			
(6)Assigned overhead			–81,000	+81,000		
(7)Completed goods				–88,000	+$88,000	
(8)Goods sold					–75,000	+$75,000
Ending Balance	$ 10,300	$ 0	$12,200	$76,200	$13,000	$75,000

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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EXERCISE 2A.8

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
(1)Purchased raw materials	+$192,000					
(1)Incurred factory labor		+$87,300				
(2)Direct materials	–153,530			+$153,530		
(2)Indirect materials	–4,470		+$4,470			
(2)Direct labor		–80,000		+80,000		
(2)Indirect labor		–7,300	+7,300			
(3)Incurred overhead costs			+49,500			
(4)Factory depreciation			+14,550			
(5)Assigned overhead			–72,000	+72,000		
(6)Completed jobs				–240,930	+$240,930	
Ending Balance	$34,000	$ 0	$3,820	$ 64,600	$240,930	

Computation of cost of jobs finished:

Job	Direct Materials	Direct Labor	Manufacturing Overhead (DL x 90%)	Total
A20	$35,240	$18,000	$16,200	$ 69,440
A21	42,920	22,000	19,800	84,720
A23	39,270	25,000	22,500	86,770
				$240,930

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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EXERCISE 2A.9

(a)

LOPEZ COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2022

Work in process, May 1		$ 14,700
Direct materials used	$62,400	
Direct labor	50,000	
Manufacturing overhead applied	40,000	
Total manufacturing costs		152,400
Total cost of work in process		167,100
Less: Work in process, May 31		15,900
Cost of goods manufactured		$151,200

[($14,700 + ($62,400 + $50,000 + $40,000)) - $15,900 = $151,200]
[(Beg. WIP + (DM + DL + MOH app.)) – End. WIP = COGM]

(b)

LOPEZ COMPANY
Income Statement (Partial)
For the Month Ended May 31, 2022

Sales revenue		$215,000
Cost of goods sold		
Finished goods, May 1	$ 12,600	
Cost of goods manufactured	151,200	
Cost of goods available for sale	163,800	
Less: Finished goods, May 31	9,500	
Cost of goods sold		154,300
Gross profit		$ 60,700

(c)

LOPEZ COMPANY
Balance Sheet (Partial)
May 31, 2022

Current assets:		
Finished goods inventory	$ 9,500	
Work in process inventory	15,900	
Raw materials inventory	7,100	$32,500

LO1, 5 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

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EXERCISE 2A.10

(a) Work in Process Inventory

April 30	**$ 9,300**	**(#10, $5,200 + #11, $4,100)**
May 31	**$18,600**	**(#11, $8,000 + #13, $4,700 + #14, $5,900)**
June 30	**$ 9,500**	**(#14, $5,900 + $3,600)**

[(Apr. 30: $5,200 + $4,100 = $9,300); (May 31: $8,000 + $4,700 + $5,900 = $18,600); (June 30: $5,900 + $3,600 = $9,500)]
[(Apr. 30: Job #10 + Job #11 = End. WIP); (May 31: (Job #11 + Job #13 + Job #14 = End. WIP); (June 30: Job #14 = End. WIP)]

(b) Finished Goods Inventory

April 30	**$ 1,200**	**(#12)**
May 31	**$ 9,600**	**(#10)**
June 30	**$19,200**	**(#11, $10,000 + #13, $9,200)**

(c) Gross Profit

Month	Job Number	Sales	Cost of Goods Sold	Gross Profit
May	**12**	**$ 1,500**	**$ 1,200**	**$ 300**
June	**10**	**12,000**	**9,600**	**2,400**
July	**11/13**	**24,000**	**19,200**	**4,800**

[(May: ($1,200 x 125%) - $1,200 = $300); (June: ($9,600 x 125%) - $9,600 = $2,400); (July: ($19,200 x 125%) - $19,200 = $4,800)]
[(May: (CGS x 1 + Markup %) – CGS = GP); (June: (CGS x 1 + Markup %) – CGS = GP); (July: (CGS x 1 + Markup %) – CGS = GP)]
LO2, 4 BT: AP Difficulty: Moderate TOT: 12 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation Reporting IMA: Cost management, Reporting

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EXERCISE 2A.11

(a)	Service Contract Costs			Service Contracts in Process	Cost of Completed Service Contracts
	Supplies	Service Salaries and Wages	Operating Overhead		
(1)Purchased supplies	+$1,800				
(2)Direct supplies*	–720			+$720	
(2)Indirect supplies**	–480		+$480		
(3)Direct labor		–$56,000		+56,000	
(3)Indirect labor		–14,000	+14,000		
(4)Incurred overhead costs			+40,000		
(5)Assigned overhead***			–50,400	+50,400	
(6)Completed work				–75,000	+$75,000
Ending Balance	$ 600	-$70,000	$4,080	$32,120	$75,000

*$ 1,200 x 60% = $720
**$ 1,200 x 40% = $480
***$56,000 x 90% = $50,400

(b)

Service Contracts in Process	
(2)	$ 720
(3)	56,000
(5)	50,400
(6)	–75,000
Balance	$ 32,120

LO1, 3, 4 BT: AP Difficulty: Easy TOT: 15 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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EXERCISE 2A.12

(a)	Waters Inc.	Renolds Inc.	Bayfield Inc.
Direct materials	$ 600	$ 400	$ 200
Auditor labor costs	5,400	6,600	3,375
Applied overhead	3,600	4,400	2,250
Total cost	$9,600	$11,400	$5,825

[(Waters app. OH: 72 x $50 = $3,600); (Renolds app. OH: 88 x $50 = $4,400); (Bayfield app. OH: 45 x $50 = $2,250)]
[(Waters app. OH: (Auditor hrs. x Predet. OH rate = App. OH); (Renolds app. OH: (Auditor hrs. x Predet. OH rate = App. OH); (Bayfield app. OH: (Auditor hrs. x Predet. OH rate = App. OH)]

(b) The Waters Inc. job is the only incomplete job, therefore, $9,600.

(c)		
Actual overhead	$11,000	
Applied overhead	10,250	($3,600 + $4,400 + $2,250)
Balance	$ 750	(underapplied)

[$11,000 – ($3,600 + $4,400 + $2,250) = $750]
[Act. OH – (Waters app. OH + Renolds app. OH + Bayfield app. OH) = Underapp. OH]
LO2, 3, 4 BT: AP Difficulty: Easy TOT: 8 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

EXERCISE 2A.13

(a) Predetermined overhead rate = Estimated overhead ÷ Estimated decorator hours
= $960,000 ÷ 40,000 decorator hours
= $24 per decorator hour

(b) 40,500 hrs. x $24 = $972,000

(c)		
Actual overhead	$982,800	
Applied overhead	972,000	
Balance	$ 10,800	underapplied

[$982,800 – (40,500 x $24) = $10,800]
[Act. OH – (Act. dec. hrs. x Predet. OH rate) = Underapp. OH]
LO3, 5 BT: AP Difficulty: Easy TOT: 8 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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SOLUTIONS TO PROBLEMS

PROBLEM 2A.1

(a) $840,000 ÷ $700,000 direct labor costs = 120% of direct labor costs

($840,000 ÷ $700,000 = 120% of DL cost)
(Est. OH costs ÷ Est. DL cost = Predet. OH rate)

(b) See solution to part (e) for job cost sheets

(c) - (f)

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
(c)Purchase raw materials	+$90,000					
(c)Incurred factory labor		+$70,000				
(c)Factory depreciation			+$12,000			
(c)Other overhead costs			+16,000			
(c)Indirect materials	–17,000		+17,000			
(c)Indirect labor		–20,000	+20,000			
(d)Direct materials	–79,000			+$79,000		
(d)Direct labor		–50,000		+50,000		
(d)Assigned overhead			–60,000	+60,000		
(e)Jobs completed				–163,000*	+$163,000	
(f)Jobs sold					–159,000**	+$159,000
Ending Balance	-$ 6,000	$0	$5,000	$26,000	$ 4,000	$159,000

*($69,000 + $94,000 = $163,000); (Job 50 costs + Job 51 costs = Cost of completed jobs)**($90,000 + $69,000 = $159,000); (Job 49 costs + Job 50 costs = Cost of jobs sold)

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PROBLEM 2A.1 (Continued)

See solution to part (e) for postings to job cost sheets.

(b)&(e) Job Cost Sheets

Job No. 50

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Beg.	$20,000	$12,000	$16,000
Jan.	10,000	5,000	6,000*
	$30,000	$17,000	$22,000

Cost of completed job	
Direct materials	$30,000
Direct labor	17,000
Manufacturing overhead	22,000
Total cost	$69,000

*$5,000 x 120%

[Job #50: $5,000 x 120% = $6,000]
[Job #50: DL cost x Predet. OH rate = App. OH]

Job No. 51

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$39,000	$25,000	$30,000**
	$39,000	$25,000	$30,000

Cost of completed job	
Direct materials	$39,000
Direct labor	25,000
Manufacturing overhead	30,000
Total cost	$94,000

**$25,000 x 120%

[Job #51: $25,000 x 120% = $30,000]
[Job #51: DL cost x Predet. OH rate = App. OH]

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PROBLEM 2A.1 (Continued)

Job No. 52			
Date	**Direct Materials**	**Direct Labor**	**Manufacturing Overhead**
Jan.	$30,000	$20,000	$24,000***

***$20,000 x 120%

[Job #52: $20,000 x 120% = $24,000]
[Job #52: DL cost x Predet. OH rate = App. OH]

(g) **Finished Goods Inventory**

Beg. bal.	$ 90,000
Completed Jobs 50 & 51	163,000
Sold Jobs 49 & 50	–159,000
End. bal.	$ 94,000

The balance in this account consists of the cost of completed Job No. 51 which has not yet been sold.

[$90,000 + ($69,000 + $94,000) – ($90,000 + $69,000) = $94,000]
[Beg. bal. + (Cost of completed jobs 50 & 51) – (Cost of jobs 49 & 50 sold) = End. bal.]

(h) **Manufacturing Overhead**

Actual	$65,000
Applied	–60,000
Underapplied	$5,000

The balance in the Manufacturing Overhead account is underapplied.

[$65,000 – ($6,000 + $30,000 + $24,000) = $5,000]
[Act. MOH – (MOH app. to jobs #50, #51, & #52) = MOH underapp.]
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PROBLEM 2A.2

(a) - (c)

(a)	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
Beginning balance	$15,000			(1) $128,400	$179,000	
Purchased raw materials	+140,000					
Incurred factory labor		+$157,000				
Direct materials	–131,000			(2) +131,000		
Indirect materials	–14,000		+$14,000			
Direct labor		–139,000		(3) +139,000		
Indirect labor		–18,000	+18,000			
Overhead costs incurred			+120,000			
Factory equip. depreciation			+8,000			
Assigned overhead			–166,800	(4) +166,800		
Completed jobs				–386,200	(5) +386,200	
Sold jobs					–378,200	+$378,200
(b)						
WIP balance				$179,000		
(c)						
Overapplied overhead			+6,800			–6,800
Ending Balance	$10,000	$ 0	$ 0	$179,000	$187,000	$371,400

Numbered entries: Entries labeled (1) – (5) are cross-referenced to calculations shown in Part (b) below.

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PROBLEM 2A.2 (Continued)

(b) (1)	Job 7640	$ 77,800	(3)	Job 7640	$ 36,000
	Job 7641	50,600		Job 7641	48,000
		$128,400		Job 7642	55,000
					$139,000
(2)	Job 7640	$ 30,000	(4)	Job 7640	$ 43,200
	Job 7641	43,000		Job 7641	57,600
	Job 7642	58,000		Job 7642	66,000
		$131,000			$166,800

(5) (a) Job 7640

Beginning balance	$ 77,800
Direct materials	30,000
Direct labor	36,000
Manufacturing overhead	43,200
	$187,000

(b) Job 7641

Beginning balance	$ 50,600
Direct materials	43,000
Direct labor	48,000
Manufacturing overhead	57,600
	$199,200

(c) Total cost of completed work

Job 7640	$187,000
Job 7641	199,200
	$386,200

Work in process balance	$179,000	
Unfinished job No. 7642	$179,000	*

* Current year's cost

Direct materials	$ 58,000
Direct labor	55,000
Manufacturing overhead	66,000
	$179,000

[($77,800 + $50,600) + ($30,000 + $43,000 + $58,000) + ($36,000 + $48,000 + $55,000) + ($43,200 + $57,600 + $66,000) – ($187,000 + $199,200) = $179,000]
[Beg. WIP bal. + DM + DL + App. OH – Cost of completed jobs 7640 & 7641 = End. WIP bal.]

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PROBLEM 2A.2 (Continued)

(c) Actual overhead costs

Incurred on account	$120,000
Indirect materials	14,000
Indirect labor	18,000
Depreciation	8,000
	$160,000

Applied overhead costs

Job 7640	$ 43,200
Job 7641	57,600
Job 7642	66,000
	$166,800

Actual overhead	$160,000
Applied overhead	166,800
Overapplied overhead	$ 6,800

[($120,000 + $14,000 + $18,000 + $8,000) – ($43,200 + $57,600 + $66,000) = $6,800]
[(OH incurred on acct. + Ind. Mat. + Ind. Labor + Depr.) – (App. OH to jobs #7640 + #7641 + #7642) = Overapp. OH]

(d)

Sales revenue (given)		$530,000
Cost of goods sold		
Add: Job 7638	$ 87,000	
Job 7639	92,000	
Job 7641	199,200	
	378,200	
Less: Overapplied overhead	6,800	371,400
Gross profit		$158,600

LO1, 2, 3, 4, 5 BT: AP Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation, Reporting IMA: Cost Management, Reporting

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PROBLEM 2A.3

(a)

	Manufacturing Costs			Work in Process Inventory	Finished Goods Inventory	Cost of Goods Sold
	Raw Materials Inventory	Factory Labor	Manufacturing Overhead			
Beginning balance	$4,200		-$990	$5,540		
(1)Purchased raw materials	+4,900					
(1)Incurred factory labor		+4,800				
(1)Misc. overhead costs			+$400			
(1)Factory equip. depr.			+900			
(2)Direct materials	–4,900			+4,900		
(2)Indirect materials	–1,500		+1,500			
(2)Direct labor		–3,600		+3,600		
(2)Indirect labor		–1,200	+1,200			
(2)Assigned overhead*			–4,500	+4,500		
(6)Completion of jobs**				–14,740	+$14,740	
(3)Sale of jobs					–14,740	+$14,740
Ending balance	$2,700	$0	-$1,490	$3,800	$0	$14,740

*($3,600 x 125% = $4,500); (DL x MOH rate = Assigned OH)

**	Job	DM	DL	MOH***	Tot. Costs
	Rodgers	$1,700	$1,560	$1,950	$5,210
	Stevens	1,300	900	1,125	3,325
	Linton	2,200	1,780	2,225	6,205
					$14,740

***125% x DL

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PROBLEM 2A.3 (Continued)

(b)

	Work in Process Inventory
Beginning balance	$5,540
Direct materials	4,900
Direct labor	3,600
Assigned overhead	4,500
Completed jobs	-14,740
Ending balance	$3,800

Job: Koss (Direct materials $2,000 + Direct labor $800 + Manufacturing overhead $1,000)..... $3,800

(c)

CASE INC.
Cost of Goods Manufactured Schedule
For the Month Ended June 30, 2022

Work in process, June 1.....		$ 5,540
Direct materials used	$4,900	
Direct labor.....	3,600	
Manufacturing overhead applied.....	4,500	
Total manufacturing costs		13,000
Total cost of work in process		18,540
Less: Work in process, June 30		3,800
Cost of goods manufactured		$14,740

[($5,540 + ($4,900 + $3,600 + $4,500)) - $3,800 = $14,740]
[(Beg. WIP + (DM used + DL + MOH app.)) – End. WIP = COGM]
LO1, 2, 3, 4, 5 BT: AP Difficulty: Easy TOT: 40 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation, Reporting IMA: Cost Management, Reporting

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PROBLEM 2A.4

(a) **Department D:** $1,200,000 ÷ $1,500,000 = 80% of direct labor cost.
Department E: $1,500,000 ÷ 125,000 = $12.00 per direct labor hour.
Department K: $900,000 ÷ 120,000 = $7.50 per machine hour.

(b)

	Department		
Manufacturing Costs	**D**	**E**	**K**
Direct materials	$140,000	$126,000	$ 78,000
Direct labor	120,000	110,000	37,500
Overhead applied	96,000*	132,000**	78,000***
Total	$356,000	$368,000	$193,500

*$120,000 x 80%
**11,000 x $12.00
***10,400 x $7.50

(c)

	Department		
Manufacturing Overhead	**D**	**E**	**K**
Incurred	$99,000	$124,000	$79,000
Applied	96,000	132,000	78,000
Under (over) applied	$ 3,000	$ (8,000)	$ 1,000

[(D: $99,000 – ($120,000 x 80%) = $3,000); (E: $124,000 – (11,000 x $12) = ($8,000)); (K: $79,000 – (10,400 x $7.50) = $1,000)]
[(D: Act. MOH – (DL cost x Predet. MOH rate) = Underapp. MOH); (E: Act. MOH – (DL hrs. x Predet. MOH rate) = Overapp. MOH); (K: Act. MOH – (Act. MH x Predet. MOH rate) = Underapp. MOH)]
LO3, 5 BT: AP Difficulty: Easy TOT: 25 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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PROBLEM 2A.5

(a) $7,600 ($16,850 + $7,975 – $17,225).
($16,850 + $7,975 - $17,225 = $7,600)
(RM used + RM end. bal. – RM purch. = RM beg. bal.)

(b) $36,000 [$9,750 + $15,000 + (75% x $15,000)]. (Given in other data).

(c) $13,950 ($16,850 – $2,900).
($16,850 - $2,900 = $13,950)
(RM used – Ind. Mat. = DM)

(d) $6,300 ($8,400 x 75%).

(e) $12,200 [Given in other data—$3,800 + $4,800 + (75% x $4,800)].
[$3,800 + $4,800 + (75% x $4,800) = $12,200]
[Job 158: DM + DL cost + (Predet. MOH rate x DL cost) = End. bal. WIP]

(f) $52,450 ($36,000 + $13,950 + $8,400 + $6,300 – $12,200).
($36,000 + $13,950 + $8,400 + $6,300 - $12,200 = $52,450)
(Beg. bal. WIP + DM + DL + MOH app. – End. bal. WIP = Jobs completed]

(g) $5,000 (Given in other data).

(h) $52,450 (See (f) above).

(i) $53,450 ($5,000 + $52,450 – $4,000).
($5,000 + $52,450 - $4,000 = $53,450)
(Beg. bal. fin. gds. inv. + Jobs completed – End. bal. fin. gds. inv. = CGS)

(j) $4,000 (Given in other data).

(k) $12,025 (Equal to factory labor incurred).

(l) $3,625 ($12,025 – $8,400).

(m) $6,300 ($7,770* – $1,470) or (Same as (d)).
***$2,900 + $3,625 + $1,245**

(n) $1,470 (Given in other data).

(o) $53,450 (Same as (i) above).

(p) $53,450 (Same as (i) above).

LO1, 2, 3, 4, 5 BT: AN Difficulty: Complex TOT: 40 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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Cost for one kayak:

Direct Materials		
Polyethylene powder	**54 pounds @ $1.50 per pound**	**$ 81**
Finishing kit	**1 kit @ $170**	**170**
Direct Labor		
More skilled	**2 hours @ $15 per hour**	**30**
Less skilled	**3 hours @ $12 per hour**	**36**
Manufacturing overhead		
150% of direct labor costs	**150% x $66**	**99**
Total cost for one kayak		**$ 416**
Cost for order of 20 kayaks		
$416 per kayak x 20 kayaks		**$8,320**

LO2, 1, 2, 3 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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(a)

JOB COST SHEET

Quantity 237 units

Job Number J57 **Date Requested Dec. 2**

Date Completed Dec. 15

Item special order parts

Date	Direct Materials	Direct Labor	Manufacturing Overhead		
			Hours	Rate	Amount
Dec. 2	$3,374				
Dec. 3		$66	2 1/2	$398*	$ 995
Dec. 8	706				
Dec. 9		66	3	398	1,194
Dec. 14	2,306				
Dec. 15		66	3	398	1,194

Cost Summary

Direct materials	$6,386
Direct labor	198
Manufacturing overhead	3,383
Total Cost	$9,967
Unit Cost ($9,967/237 units)	$42.05

***$840,576 ÷ 2,112**

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WC2A (Continued)

JOB COST SHEET

Quantity 142 units
Job Number K52 **Date Requested Dec. 2**
Date Completed Dec. 15

Item special order parts

Date	Direct Materials	Direct Labor	Manufacturing Overhead		
			Hours	Rate	Amount
Dec. 2	$1,687				
Dec. 3		$33	2	$398*	$796
Dec. 8	353				
Dec. 9		33	2	398	796
Dec. 14	1,153				
Dec. 15		33	2	398	796

Cost Summary

Direct materials	$3,193
Direct labor	99
Manufacturing overhead	2,388
Total Cost	$5,680
Unit Cost ($5,680/142 units)	$40.00

***$840,576 ÷ 2,112**

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WC2A (Continued)

(b) Since production involved the use of machinery that required minimal labor, using machine hours as the cost driver for producing the sprinkler heads would more accurately reflect the overhead costs than would direct labor.

When the irrigation system is installed, this would require a great deal of labor and minimal machinery. Therefore, the cost driver for overhead costs would more likely be direct labor costs.

LO2, 3 BT: AP Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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CC2A GREETINGS INC.

1. **A predetermined manufacturing overhead rate means that all manufacturing overhead costs, are allocated to each job based on a cost driver. Often this is done based on the expected volume of units produced. That is, products that are produced in higher volume are allocated more overhead.**

   In the case of Greetings Inc., in addition to volume sold, the base used is
   the cost of each print sold. That is, each print is allocated an amount of manufacturing overhead based on the cost of the print. The management of Greetings Inc. felt that this approach was logical because it was expected that more expensive prints would be more likely to be framed, and that the processing of framing requires the incurrence of considerably more overhead costs.

2. **The advantages of using the cost of each print as the manufacturing overhead cost driver are that: (1) it is relatively inexpensive to implement in a business, (2) it is easy to explain, and (3) it keeps accounting records in compliance with GAAP.**

   The primary disadvantage of using the cost of each print as the manufacturing overhead cost driver is that it may not result in a reasonable estimate of the cost of a job, batch, or service. That is, the assumed relationship—that the cost of the print is related to the amount of overhead cost incurred—may be incorrect. Many of the overhead costs incurred are the result of the framing and matting processes. However, the approach used by Greetings Inc. will result in a high overhead allocation to expensive prints, even if those prints are not framed. Furthermore, even if overhead costs are related to the cost of prints, and substantially more unframed prints are sold than framed prints, then an inordinate amount of overhead will still be allocated to the unframed prints simply because more of those are sold. By allocating overhead in an inappropriate fashion, product costs are distorted, and, as a consequence, management decision making is affected.

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3. Under a job order costing system, a predetermined overhead rate must be used, since the cost of jobs must be calculated throughout the year (rather than just at year-end). This predetermined overhead rate is based on expected costs and the expected total amount of the cost driver. Therefore, the first thing that must be done is to compute the total expected overhead cost. This step was completed in the information provided by the accounting and production teams. It was determined to be $375,200.

The second step is to determine the total expected cost of prints for the period.

Unframed:	**80,000 X $12 =**	**$ 960,000**
Steel-framed:	**15,000 X $16 =**	**240,000**
Wood-framed:	**7,000 X $20 =**	**140,000**
Total expected cost of prints		**$1,340,000**

Once the total expected overhead cost and total expected print cost are known, the overhead rate can be determined.

Predetermined overhead rate = $375,200 ÷ $1,340,000 = $0.28

This means that for every $1 of print cost, it is assumed that 28¢ of manufacturing overhead costs are consumed. For example, a $12 print will be assigned $3.36 ($12 X $0.28) of overhead.

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CC2A (Continued)

4.

	Lance Armstrong Print	John Elway Steel-Framed Print, No Matting	Lambeau Field Wood-Framed Print, with Matting
Direct material			
Print	$12.00	$16.00	$20.00
Frame and glass		4.00	6.00
Matting			4.00
Direct labor			
Picking			
([10/60] X $12)	2.00	2.00	2.00
Matting and framing			
([20/60] X $21)		7.00	
([30/60] X $21)			10.50
Manufacturing overhead			
(0.28 X $12, $16, $20)	3.36	4.48	5.60
Total product cost	$17.36	$33.48	$48.10

5.

(a)	Unframed prints	80,000 X $12 X $0.28 =	$268,800
(b)	Steel-framed prints	15,000 X $16 X $0.28 =	67,200
(c)	Wood-framed prints	7,000 X $20 X $0.28 =	39,200
			$375,200

(d) As a percentage, unframed prints are being allocated 71.6 percent or ($268,800 ÷ $375,200) of the total overhead cost.

6. No. Unframed prints are being allocated too much manufacturing overhead and framed prints too little manufacturing overhead. In designing the allocation approach, management had assumed that since the average cost of framed prints would exceed the average cost of unframed prints, more of the overhead would be allocated to framed prints. However, the cause of the apparent misallocation is that the volume of unframed prints is much greater than the volume of framed prints. This dramatic difference in volume far outweighs the difference in price. Therefore, unframed prints as a category end up absorbing the bulk of the overhead costs. This does not seem appropriate since a review of the manufacturing overhead costs shows that many of the overhead costs are associated with the framing and matting component of the production area, such as salaries, rent of factory equipment, and information systems.

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7. The high-volume unframed prints will be over-costed and the low-volume framed prints will be under-costed. This will occur because the category of prints that are sold most frequently will generally carry the greatest amount of overhead. For example, in reference to the solution to question 4, the framed and matted print is being allocated only $5.60, but an unframed print is allocated $3.36 of manufacturing overhead. This is not logical because a substantial portion of manufacturing overhead costs is dedicated to framing and matting prints.

As a result, Greetings Inc. might end up selling framed prints at a price that is too low to cover its cost. Changing the way the overhead is allocated may improve the profit center's performance.

LO3 BT: E Difficulty: Difficult TOT: 60 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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CT2A.1 DECISION-MAKING ACROSS THE ORGANIZATION

(a) The manufacturing cost element that is responsible for the fluctuating unit costs is manufacturing overhead. Manufacturing overhead is being included as incurred rather than being applied on a predetermined basis. Direct materials and direct labor are not the cause as they have the same unit cost per batch in each quarter.

(b) The solution is to apply overhead using a predetermined overhead rate based on a relevant basis of production activity. Based on actual overhead incurred and using batches of product TC-1 as the activity base, the overhead rate is $16,000 per batch [($105,000 + $153,000 + $97,000 + $125,000) ÷ 30]. Another approach would be to use direct labor cost as the relevant basis to apply overhead on a predetermined basis. For example, a rate of 133 1/3% of direct labor cost ($480,000 ÷ $360,000) could be used. Either approach will provide the same result.

(c) The quarterly results using a predetermined overhead rate based on batches produced are as follows:

		Quarter			
Costs		**1**	**2**	**3**	**4**
Direct materials		$100,000	$220,000	$ 80,000	$200,000
Direct labor		60,000	132,000	48,000	120,000
Manufacturing overhead Applied ($16,000 x batches)		80,000	176,000	64,000	160,000
Total	(a)	$240,000	$528,000	$192,000	$480,000
Production in batches	(b)	5	11	4	10
Unit cost (per batch) (a) ÷ (b)		$ 48,000	$ 48,000	$ 48,000	$ 48,000

(Note: The unit cost of a batch remains the same in each quarter. Both sales and production should be pleased with this solution to fluctuating unit costs.)

LO2, 3 BT: E Difficulty: Moderate TOT: 20 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation IMA: Cost Management

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CT2A.2 MANAGERIAL ANALYSIS

1. **Increase Work in Process Inventory and decrease Raw Materials Inventory.**

2. **Increase Sales Bonus Expense and decrease Cash.**

3. **Increase Factory Labor and increase Factory Wages Payable.**

4. **Increase Manufacturing Overhead and decrease Raw Materials Inventory.**

LO2, 3, 5 BT: AN Difficulty: Moderate TOT: 30 min. AACSB: Analytic AICPA FC: Measurement, Analysis and Interpretation, Reporting AICPA PC: Communication IMA: Cost Management, Reporting

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CT2A.3	REAL-WORLD FOCUS

(a) Candidates for the CMA Certificate must complete two continuous years of professional experience in management accounting or financial management.

(b) CMAs, and candidates who have completed the CMA examination, but have not yet met the experience requirement, are required to maintain their proficiency in the fields of management accounting and financial management. This includes knowledge of new concepts and techniques as well as their application in the management accounting and financial management professions. The objective is to maintain the professional competence of the individual and to enhance one's ability to perform job-related requirements. Persons who have retired need not meet continuing education requirements. The continuing requirement is 30 hours per year and at least 2 of those hours must be ethics-related.

A broad range of subjects may be included in the programs for which hours of credit will be given. The subjects should be related to the topics covered on the CMA examination and/or to an individual's job responsibilities. Illustrative of the subjects that may qualify are: all aspects of accounting, financial management, business applications of mathematics and statistics, computer science, economics, management, production, marketing, business law, and organizational behavior.

LO N/A BT: C Difficulty: Easy TOT: 20 min AACSB: Technology, Communication AICPA FC: Reporting AICPA PC: Communication IMA: None

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CT2A.4 COMMUNICATION ACTIVITY

Williams Company
Date

Nancy Kopay
123 Cedar Lane
Altoona, Kansas 66651

Dear Ms. Kopay:

Thank you for your prompt payment! I am very glad that you found the cost information helpful.

Thank you also for your questions about our overhead costs. We do try to provide our customers with as much information as possible, but we cannot give detailed information on overhead costs.
You asked why we do not use actual overhead costs when we bill our customers. We estimate overhead costs, rather than use actual costs, for several reasons. One of the most important reasons for you is that we could not prepare bills in a timely manner if we had to use actual overhead. We would have to wait until we were billed for such things as electricity and telephone service. A second reason is that some costs we include in overhead are only payable once or twice a year, such as insurance and taxes. When we use an estimated rate, we are able to allow for those costs. A third reason is that some costs are fixed, which means that they stay the same in dollar amount from month to month. This category includes items such as rent. If we billed you based on our actual costs, you would be billed a higher amount if your work was done during a slow time (because we would have fewer jobs to spread the costs over). An estimated overhead rate allows us to level out these costs.

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CT2A.4 (Continued)

I hope this answers some of your questions. I'm glad you are interested in our company and that you took the time to write. I am sending a copy of our annual report under separate cover. It contains some details on the information you asked about.

Thanks again for your letter and for having Williams make your new cabinets!

Sincerely,

Student

LO3 BT: C Difficulty: Easy TOT: 20 min. AACSB: Communication AICPA FC: Measurement, Analysis and Interpretation, Reporting AICPA PC: Communication IMA: Cost Management, Reporting

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CT2A.5 ETHICS CASE

(a) The stakeholders in this situation are:

- **Alice Reiley, controller for LRF Printing.**
- **The president of LRF Printing.**
- **The customers of LRF Printing.**
- **The competitors of LRF Printing.**

(b) Padding cost-plus contracts is both unethical and illegal. Alice is faced with an ethical dilemma. She will be in trouble with the president if she doesn't follow his directive, and she will be committing an unethical act if she does follow his instructions.

(c) Alice should continue to accurately account for cost-plus contracts and, if challenged by the president, she should say that she is doing her very best to charge each and every legitimate cost to the cost-plus contracts. Let the president perform the unethical act if he continues to persist in padding costs.

LO N/A BT: E Difficulty: Easy TOT: 15 min. AACSB: Ethics AICPA FC: Reporting AICPA PC: Ethical Conduct, Communication IMA: Business Applications

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CT2A.6	ALL ABOUT YOU

The top 10 steps to starting a business are:

1. **Conduct market research.**
2. **Write your business plan.**
3. **Fund your business.**
4. **Pick your business location.**
5. **Choose a business structure.**
6. **Choose your business name.**
7. **Register your business.**
8. **Get federal and state tax IDs.**
9. **Apply for licenses and permits.**
10. **Open a business bank account.**

LO N/A BT: E Difficulty: Easy TOT: 15 min. AACSB: Technology AICPA FC: Reporting AICPA PC: Communication IMA: Reporting

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CT2A.7 CONSIDERING YOUR COSTS AND BENEFITS

Discussion guide: The situation presented is a difficult one because you are presently receiving some help for free. It would seem that the best strategy is to price your services based on what it would cost you to do the landscape business without any free help. In the long run, it is going to be impossible to continue unless you can cover these costs. In addition, if you underprice your services today, your customers may expect your prices will remain as low in the future. That probably cannot happen, given that your costs will increase substantially after the first two years. However, we should note that it is not unusual to start a small business with some assets available to you. Then, as your business grows, you acquire additional assets to meet your needs. After all, you may need a low price to get started, and as you gain experience you will be able to charge more or become more efficient.

So what to do? Let's address your old truck first. You should treat the truck as an asset owned by your business. Put it on your books at its fair value, and depreciate it over a reasonable life. This will result in an overhead charge. You need to cover the cost of that truck, as you will have to buy another one some day. The land, barn, and your mother's services are a little more difficult. If you rented the land and barn and if you paid an assistant, all of these costs would be charged to overhead. (The assistant would be indirect labor.) You are currently getting all these services for free. This is a good situation now, and you may need this situation early in your business to help you get started. But you should recognize that even if you run your business profitably for the first two years, you may have problems beginning in the third year. Thus, it would seem prudent to establish a budget based on both scenarios for the first two years. If you can charge based on your expected costs in the future, do so. If that is not realistic, because you need to establish yourself and get more experience, then charge less. But be sure from the start to cover a reasonable amount of your costs, or the business does not make sense for you financially.

LO2, 3, 4 BT: E Difficulty: Moderate TOT: 25 min. AACSB: Reflective Thinking, Communication AICPA FC: Measurement, Analysis and Interpretation, Reporting, AICPA PC: Communication IMA: Cost Management, Reporting

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CHAPTER 2

Job Order Costing

Learning Objectives

1. Describe cost systems and the flow of costs in a job order system.
2. Use a job cost sheet to assign costs to work in process.
3. Demonstrate how to determine and use the predetermined overhead rate.
4. Prepare entries for manufacturing and service jobs completed and sold.
5. Distinguish between under- and overapplied manufacturing overhead.

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ANSWERS TO QUESTIONS

1. (a) Cost accounting involves the measuring, recording, and reporting of product costs. A cost accounting system consists of manufacturing cost accounts that are fully integrated into the general ledger of a company.

(b) An important feature of a cost accounting system is the use of a perpetual inventory system that provides immediate, up-to-date information on the cost of a product.

LO1 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

2. (a) The two principal types of cost accounting systems are: (1) job order cost system and (2) process cost system. Under a job order cost system, costs are assigned to each job or batch of goods; at all times each job or batch of goods can be separately identified. A job order cost system measures costs for each completed job, rather than for set time periods. Under a process cost system, product-related costs are accumulated by or assigned to departments or processes for a set period of time. Job order costing lends itself to specific, special-order manufacturing or servicing while process costing is better suited to similar, large-volume products and continuous process manufacturing.

(b) A company can use both types of systems. For example, General Motors uses process costing for standard model cars and job order costing for custom-made vehicles.

LO1 BT: C Difficulty: Easy TOT: 5 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

3. A job order cost system is most likely to be used by a company that receives special orders, or custom builds, or produces heterogeneous items or products; that is, the product manufactured or the service rendered is tailored to the customer or client's requests, needs, or situation. Examples of industries that use job order systems are custom home builders, commercial printing companies, motion picture companies, construction contractors, repair shops, accounting and law firms, hospitals, shipbuilders, and architects.

LO1 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

4. A process cost system is most likely to be used by manufacturing companies with continuous production flows usually found in mass production, assembly line, large-volume, uniform, or relatively similar product industries. Companies producing appliances, chemicals, pharmaceuticals, rubber and tires, plastics, cement, petroleum, and automobiles utilize process cost systems.

LO1 BT: C Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

5. The major steps in the flow of costs in a job order cost system are: (1) accumulating the manufacturing costs incurred and (2) assigning the accumulated costs to work done.

LO1 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

6. Not true. Entries to Manufacturing Overhead are also made at the end of an accounting period. For example, there will be adjusting entries for factory depreciation, property taxes, and insurance.

LO1 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

7. The source document for assigning materials is the materials requisition slip and the source document for assigning labor is the time ticket. The entries are:

Materials			Labor		
Work in Process Inventory	XX		Work in Process Inventory	XX	
Manufacturing Overhead	XX		Manufacturing Overhead	XX	
Raw Materials Inventory		XX	Factory Labor		XX

LO2 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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8. The purpose of a job cost sheet is to record the costs chargeable to a specific job and to determine the total and unit costs of the completed job.
LO2 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

9. The source documents for charging costs to specific jobs are materials requisition slips for direct materials, time tickets for direct labor, and the predetermined overhead rate for manufacturing overhead.
LO2 BT: K Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

10. The materials requisition slip is a business document used as an authorization to issue materials from inventory to production. It is approved and signed by authorized personnel so that materials may be removed from inventory and charged to production, to specific jobs, departments, or processes. The materials requisition slip is the basis for posting to the materials inventory records and to the job cost sheet.
LO2 BT: K Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

11. Not true. Actual manufacturing overhead cannot be determined until the end of a period of time. Consequently, there could be a significant delay in assigning overhead and in determining the total cost of the completed job.
LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

12. The elements for computing the predetermined overhead rate are the estimated annual overhead costs and an expected activity base such as direct labor hours. The rate is computed by dividing the estimated annual overhead costs by the expected annual operating activity.
LO3 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

13. At any point in time, the balance in Work in Process Inventory should equal the sum of the costs shown on the job cost sheets of unfinished jobs. Alternatively, posting to Work in Process Inventory may be compared with the sum of the postings to the job cost sheets for each of the manufacturing cost elements.
LO3 BT: K Difficulty: Easy TOT: 3 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

14. Jane is incorrect. There is a difference in computing total manufacturing costs. In job order costing, manufacturing overhead applied is used, whereas in Chapter 1, actual manufacturing overhead is used.
LO4 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

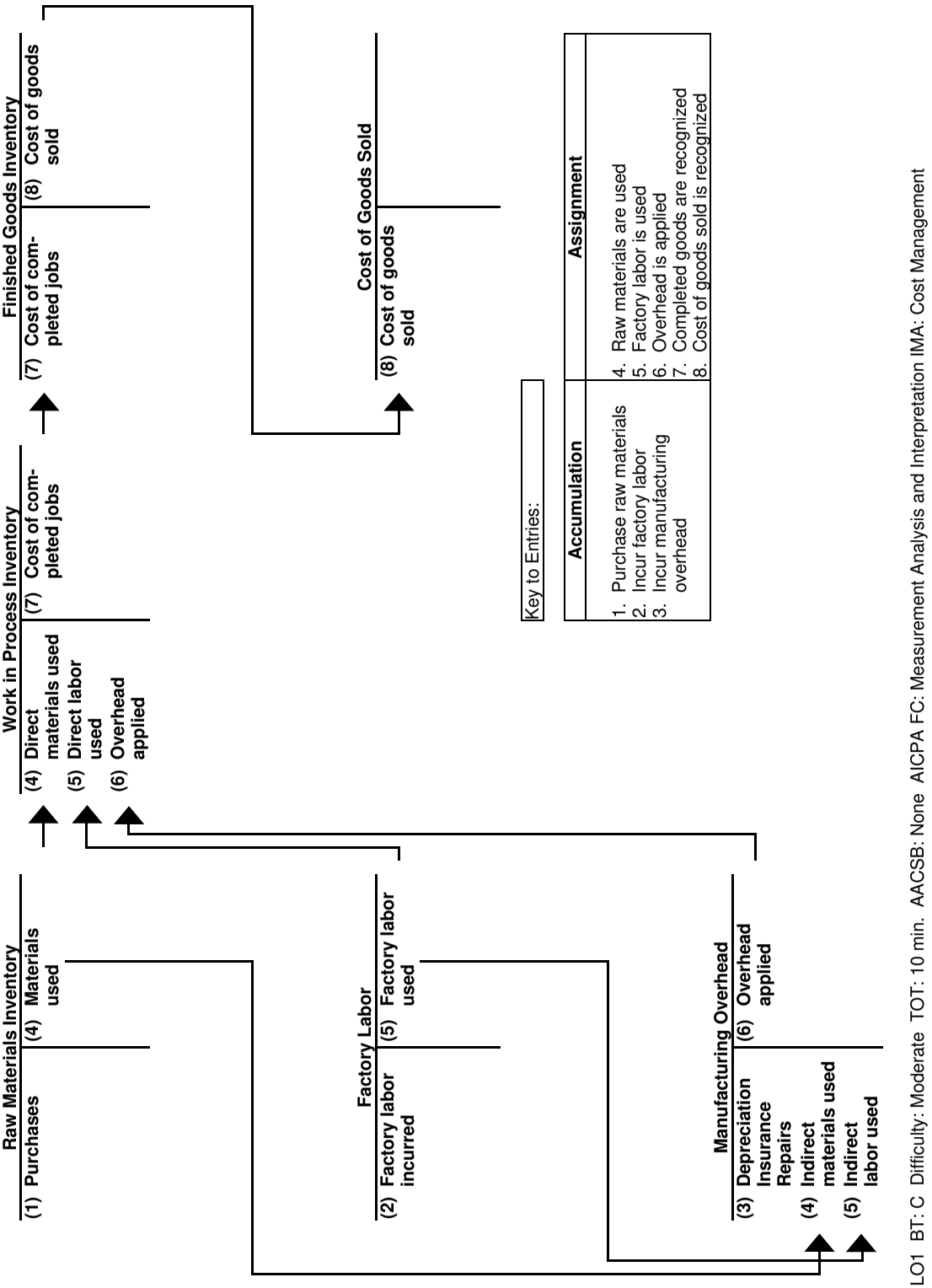
15. Underapplied overhead means that the overhead assigned to work in process is less than the overhead incurred. Overapplied overhead means that the overhead assigned to work in process is greater than the overhead incurred. Manufacturing Overhead will have a debit balance when overhead is underapplied and a credit balance when overhead is overapplied.
LO5 BT: C Difficulty: Easy TOT: 4 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

16. Under- or overapplied overhead is not closed to Income Summary. The balance in Manufacturing Overhead is eliminated through an adjusting entry. Under- or overapplied overhead generally is considered to be an adjustment of Cost of Goods Sold.
LO5 BT: C Difficulty: Easy TOT: 2 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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SOLUTIONS TO BRIEF EXERCISES

BRIEF EXERCISE 2.1



LO1 BT: C Difficulty: Moderate TOT: 10 min. AACSB: None AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2.2

Jan. 31	Raw Materials Inventory	4,000	
	Accounts Payable		4,000
31	Factory Labor	6,000	
	Payroll Liabilities		6,000
31	Manufacturing Overhead	2,000	
	Utilities Payable		2,000

LO1 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.3

Jan. 31	Work in Process Inventory	2,800	
	Manufacturing Overhead	600	
	Raw Materials Inventory		3,400

LO2 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.4

Jan. 31	Work in Process Inventory	5,200	
	Manufacturing Overhead	800	
	Factory Labor		6,000

LO2 BT: AP Difficulty: Easy TOT: 2 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.5

Job 1		
Date	Direct Materials	Direct Labor
1/31	900	
1/31		2,200

Job 2		
Date	Direct Materials	Direct Labor
1/31	1,200	
1/31		1,600

Job 3		
Date	Direct Materials	Direct Labor
1/31	700	
1/31		1,400

LO2 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2.6

Overhead rate per direct labor cost is 180%, or ($900,000 ÷ $500,000).
Overhead rate per direct labor hour is $18, or ($900,000 ÷ 50,000 DLH).
Overhead rate per machine hour is $9, or ($900,000 ÷ 100,000 MH).

LO3 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.7

Jan. 31	**Work in Process Inventory**	**28,000**	
	Manufacturing Overhead		
	($40,000 X 70%)		**28,000**
Feb. 28	**Work in Process Inventory**	**21,000**	
	Manufacturing Overhead		
	($30,000 X 70%)		**21,000**
Mar. 31	**Work in Process Inventory**	**35,000**	
	Manufacturing Overhead		
	($50,000 X 70%)		**35,000**

LO3 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.8

Mar. 31	**Finished Goods Inventory**	**50,000**	
	Work in Process Inventory		**50,000**
31	**Cash**	**35,000**	
	Sales Revenue		**35,000**
31	**Cost of Goods Sold**	**20,000**	
	Finished Goods Inventory		**20,000**

LO4 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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BRIEF EXERCISE 2.9

	Service Contracts in Process	**28,000**	
	Operating Overhead	**8,000**	
	Payroll Liabilities		**36,000**
	Service Contracts in Process ($28,000 X .25)	**7,000**	
	Operating Overhead		**7,000**

LO4 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

BRIEF EXERCISE 2.10

Shimeca Company

Dec. 31	**Cost of Goods Sold**	**1,200**	
	Manufacturing Overhead		**1,200**

Garcia Company

Dec. 31	**Manufacturing Overhead**	**900**	
	Cost of Goods Sold		**900**

LO5 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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SOLUTIONS FOR DO IT! EXERCISES

DO IT! 2.1

(a)	Raw Materials Inventory	18,000	
	Accounts Payable		18,000
	(Purchases of raw materials on account)		
(b)	Factory Labor	40,000	
	Payroll Liabilities		40,000
	(To record factory labor costs)		
(c)	Manufacturing Overhead	15,300	
	Accumulated Depreciation—Buildings		9,500
	Utilities Payable		3,100
	Prepaid Factory Insurance		2,700
	(To record overhead costs)		

LO1 BT: AP Difficulty: Easy TOT: 6 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

DO IT! 2.2

The three summary entries are:

Work in Process Inventory ($7,200 + $9,000)	16,200	
Raw Materials Inventory		16,200
(To assign materials to jobs)		
Work Process Inventory ($4,000 + $8,000)	12,000	
Factory Labor		12,000
(To assign labor to jobs)		

LO2 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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DO IT! 2.3

The predetermined overhead for Washburn Company is:

$200,000 ÷ 2,500 hours = $80.00 per machine hour

The amount of overhead assigned to number 551 would be:

90 machine hours × $80.00 = $7,200

The entry to record the assignment of overhead to job number 551 on January 15th is:

January 15	**Work in Process Inventory**	**7,200**	
	Manufacturing Overhead		**7,200**
	(To assign overhead to job 551)		

LO3 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management
[($200,000 ÷ 2,500 hrs. = $80/hr.); (90 hrs. x $80/hr. = $7,200)]
[(Expected MOH ÷ Expected MH = Predet. OH rate); (Act. MH x Predet. OH rate = Applied OH)]

DO IT! 2.4

Jan. 31	**Finished Goods Inventory**	**120,000**	
	Work in Process Inventory		**120,000**
	(To record completion of Job 310, costing $70,000 and Job 312, costing $50,000)		
31	**Accounts Receivable**	**90,000**	
	Sales Revenue		**90,000**
	(To record sale of Job 312)		
31	**Cost of Goods Sold**	**50,000**	
	Finished Goods Inventory		**50,000**
	(To record cost of goods sold for Job 312)		

LO4 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

DO IT! 2.5

Manufacturing overhead applied = 130% X $85,000 = $110,500
Underapplied manufacturing overhead = $115,000 – $110,500 = $4,500

LO5 BT: AP Difficulty: Easy TOT: 4 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management
[($85,000 x 130% = $110,500); ($115,000 - $110,500 = $4,500)]
[(Actual DL cost x Predet. OH rate = Applied OH); (Actual OH – Applied OH = Underapp. MOH)]

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SOLUTIONS TO EXERCISES

EXERCISE 2.1

(a)	Jan. 31	Factory Labor	90,000	
		Payroll Liabilities		90,000
(b)	Jan. 31	Work in Process Inventory ($90,000 X 85%)	76,500	
		Manufacturing Overhead	13,500	
		Factory Labor.....		90,000

LO1, 2 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.2

(a)	May 31	Work in Process Inventory.....	10,400	
		Manufacturing Overhead.....	800	
		Raw Materials Inventory		11,200
	31	Work in Process Inventory.....	12,500	
		Manufacturing Overhead.....	1,200	
		Factory Labor.....		13,700
	31	Work in Process Inventory ($12,500 X 60%)	7,500	
		Manufacturing Overhead		7,500
	31	Finished Goods Inventory	7,540	
		Work in Process Inventory.....		7,540
		($2,000 + $2,500 + $1,900 + $1,140*)		

*$1,900 X 60%

(b)

Work in Process Inventory

May 1	Balance	3,500	May 31		7,540
31		10,400			
31		12,500			
31		7,500			
May 31	Balance	26,360			

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EXERCISE 2.2 (Continued)

Job Cost Sheets

Job No.	Beginning Work in Process	Direct Material	Direct Labor	Manufacturing* Overhead	Total
430	$1,500	$3,500	$ 3,000	$1,800	$ 9,800
431	0	4,400	7,600	4,560	16,560
	$1,500	$7,900	$10,600	$6,360	$26,360

***Direct labor X .60**

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.3

(a) 1. $15,200, or ($5,000 + $6,000 + $4,200).

2. Last year 70%, or ($4,200 ÷ $6,000); this year 80% (either $6,400 ÷ $8,000 or $3,200 ÷ $4,000).

[Last yr.: ($4,200 ÷ $6,000 = 70%); This yr.: ($3,200 ÷ $4,000 = 80%)]
[Last yr.: (MOH cost ÷ DL cost = MOH predet. OH rate); This yr.: (MOH cost ÷ DL cost = Predet. OH rate)]

(b)

Jan. 31	Work in Process Inventory	8,000		
	Raw Materials Inventory			8,000
31	Work in Process Inventory	12,000		
	Factory Labor			12,000
31	Work in Process Inventory	9,600		
	Manufacturing Overhead			9,600
31	Finished Goods Inventory	44,800		
	Work in Process Inventory			44,800

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.4

$145,650 + (a) = $201,500
(a) = $55,850

(b) + $50,000 + $42,500 = $145,650
(b) = $53,150

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EXERCISE 2.4 (Continued)

$201,500 – (c) = $192,300
(c) = $9,200

[Note: The instructions indicate that manufacturing overhead is applied on the basis of direct labor cost, and the rate is the same in all cases. From Case A, a student should note the overhead rate to be 85%, or ($42,500 ÷ $50,000).]

(d) = .85 X $140,000
(d) = $119,000
[($42,500 ÷ $50,000) x $140,000 = $119,500]
[From Case A: (MOH applied ÷ DL cost) x Case B DL cost = Case B MOH app.]

$83,000 + $140,000 + $119,000 = (e)
(e) = $342,000

$342,000 + $15,500 = (f)
(f) = $357,500

$357,500 – $11,800 = (g)
(g) = $345,700
LO1, 5 BT: AN Difficulty: Moderate TOT: 20 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.5

(a) $2.40 per machine hour ($300,000 ÷ 125,000 MH).

(b) ($322,000) – ($2.40 x 130,000 Machine Hours)
$322,000 – $312,000 = $10,000 underapplied

[$322,000 – ($2.40 x 130,000) = $10,000 underapp.]

(c) Cost of Goods Sold 10,000
Manufacturing Overhead 10,000
LO3, 5 BT: AP Difficulty: Easy TOT: 5 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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EXERCISE 2.6

(a) (1) The source documents are:

Direct materials—Materials requisition slips.
Direct labor—Time tickets.
Manufacturing overhead—Predetermined overhead rate.

(2) The predetermined overhead rate is 125% of direct labor cost. For example, on July 15, the computation is $550 ÷ $440 = 125%. The same result is obtained on July 22 and 31.

($550 ÷ $440 = 125% of DL cost)
(July 15: MOH cost ÷ DL cost = Predet. MOH rate)

(3) The total cost is:

Direct materials	$4,690
Direct labor	1,360
Manufacturing overhead	1,700
	$7,750

The unit cost is $3.10 ($7,750 ÷ 2,500).

(b)	July 31	Finished Goods Inventory	7,750	
		Work in Process Inventory		7,750

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.7

1.		Raw Materials Inventory	46,300	
		Accounts Payable		46,300
2.		Work in Process Inventory	29,200	
		Manufacturing Overhead	6,800	
		Raw Materials Inventory		36,000
3.		Factory Labor	59,900	
		Payroll Liabilities		59,900
4.		Work in Process Inventory	54,000	
		Manufacturing Overhead	5,900	
		Factory Labor		59,900

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EXERCISE 2.7 (Continued)

5.	Manufacturing Overhead	80,500	
	Accounts Payable		80,500
6.	Depreciation Expense	8,100	
	Accumulated Depreciation—Building		8,100
7.	Work in Process Inventory ($54,000 X 150%)	81,000	
	Manufacturing Overhead		81,000
8.	Finished Goods Inventory	88,000	
	Work in Process Inventory		88,000
9.	Accounts Receivable	103,000	
	Sales Revenue		103,000
	Cost of Goods Sold	75,000	
	Finished Goods Inventory		75,000

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.8

1.	Raw Materials Inventory	192,000	
	Accounts Payable		192,000
	Factory Labor	87,300	
	Payroll Liabilities		87,300
2.	Work in Process Inventory	153,530	
	Manufacturing Overhead	4,470	
	Raw Materials Inventory		158,000
	Work in Process Inventory	80,000	
	Manufacturing Overhead	7,300	
	Factory Labor		87,300
3.	Manufacturing Overhead	49,500	
	Accounts Payable		49,500

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EXERCISE 2.8 (Continued)

4.	Manufacturing Overhead	14,550	
	Accumulated Depreciation—Equipment		14,550
5.	Depreciation Expense	14,300	
	Accumulated Depreciation—Building		14,300
6.	Work in Process Inventory	72,000	
	Manufacturing Overhead (90% X $80,000)		72,000
7.	Finished Goods Inventory	240,930	
	Work in Process Inventory		240,930

Computation of cost of jobs finished:

Job	Direct Materials	Direct Labor	Manufacturing Overhead (90% x DL$)	Total
A20	$35,240	$18,000	$16,200	$ 69,440
A21	42,920	22,000	19,800	84,720
A23	39,270	25,000	22,500	86,770
				$240,930

LO1, 2, 3, 4 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.9

(a)

LOPEZ COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2022

Work in process, May 1		$ 14,700
Direct materials used	$62,400	
Direct labor	50,000	
Manufacturing overhead applied	40,000	
Total manufacturing costs		152,400
Total cost of work in process		167,100
Less: Work in process, May 31		15,900
Cost of goods manufactured		$151,200

[($14,700 + ($62,400 + $50,000 + $40,000)) - $15,900 = $151,200]
[(Beg. WIP + (DM + DL + MOH app.)) – End. WIP = COGM]

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EXERCISE 2.9 (Continued)

(b)

LOPEZ COMPANY
Income Statement (Partial)
For the Month Ended May 31, 2022

Sales revenue		$215,000
Cost of goods sold		
Finished goods, May 1	$ 12,600	
Cost of goods manufactured	151,200	
Cost of goods available for sale	163,800	
Less: Finished goods, May 31	9,500	
Cost of goods sold		154,300
Gross profit		$ 60,700

(c)

LOPEZ COMPANY
Balance Sheet (Partial)
May 31, 2022

Current assets:		
Finished goods inventory	$ 9,500	
Work in process inventory	15,900	
Raw materials inventory	7,100	$32,500

LO1, 5 BT: AP Difficulty: Easy TOT: 18 min. AACSB: Analytic AICPA FC: Reporting IMA: Reporting

EXERCISE 2.10

(a) Work in Process Inventory

April 30	$ 9,300	(#10, $5,200 + #11, $4,100)
May 31	$18,600	(#11, ($4,100 + $3,900) + #13, $4,700 + #14, $5,900)
June 30	$ 9,500	(#14, $5,900 + $3,600)

[(Apr. 30: $5,200 + $4,100 = $9,300); (May 31: $8,000 + $4,700 + $5,900 = $18,600); (June 30: $5,900 + $3,600 = $9,500)]
[(Apr. 30: Job #10 + Job #11 = End. WIP); (May 31: (Job #11 + Job #13 + Job #14 = End. WIP); (June 30: Job #14 = End. WIP)]

(b) Finished Goods Inventory

April 30	$ 1,200	(#12)
May 31	$ 9,600	(#10)
June 30	$19,200	(#11, $10,000 + #13, $9,200)

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EXERCISE 2.10 (Continued)

(c) Gross Profit

Month	Job Number(s)	Sales	Cost of Goods Sold	Gross Profit
May	12	$ 1,500	$ 1,200	$ 300
June	10	12,000	9,600	2,400
July	11/13	24,000	19,200	4,800

[(May: ($1,200 x 125%) - $1,200 = $300); (June: ($9,600 x 125%) - $9,600 = $2,400); (July: ($19,200 x 125%) - $19,200 = $4,800)]
[(May: (CGS x 1 + Markup %) – CGS = GP); (June: (CGS x 1 + Markup %) – CGS = GP); (July: (CGS x 1 + Markup %) – CGS = GP)]
LO2, 4 BT: AP Difficulty: Moderate TOT: 12 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation, Reporting IMA: Cost management, Reporting

EXERCISE 2.11

(a)

1.	Supplies	1,800	
	Accounts Payable		1,800
2.	Service Contracts in Process	720	
	Operating Overhead	480	
	Supplies		1,200
3.	Service Contracts in Process	56,000	
	Operating Overhead	14,000	
	Salaries and Wages		70,000
4.	Operating Overhead	40,000	
	Cash		40,000
5.	Service Contracts in Process ($56,000 X 90%)	50,400	
	Operating Overhead		50,400
6.	Cost of Completed Service Contracts	75,000	
	Service Contracts in Process		75,000

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EXERCISE 2.11 (Continued)

(b)

Service Contracts in Process			
2.	720	75,000	6.
3.	56,000		
5.	50,400		
	32,120		

LO1, 3, 4 BT: AP Difficulty: Easy TOT: 15 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.12

(a)

	Waters	Renolds	Bayfield
Direct materials	$ 600	$ 400	$ 200
Auditor labor costs	5,400	6,600	3,375
Applied overhead*	3,600	4,400	2,250
Total cost	$9,600	$11,400	$5,825

*Waters: 72 x $50 = $3,600 Renolds: 88 x $50 = $4,400 Bayfield: 45 x $50 = $2,250
[(Waters app. OH: 72 x $50 = $3,600); (Renolds app. OH: 88 x $50 = $4,400); (Bayfield app. OH: 45 x $50 = $2,250)]
[(Waters app. OH: (Auditor hrs. x Predet. OH rate = App. OH); (Renolds app. OH: (Auditor hrs. x Predet. OH rate = App. OH); (Bayfield app. OH: (Auditor hrs. x Predet. OH rate = App. OH)]

(b) The Waters job is the only incomplete job, therefore, $9,600.

(c)

Actual overhead	$11,000 (DR)
Applied overhead	10,250 (CR)
Balance (underapplied)	$ 750 (DR)

[$11,000 – ($3,600 + $4,400 + $2,250) = $750]
[Act. OH – (Waters app. OH + Renolds app. OH + Bayfield app. OH) = Underapp. OH]
LO2, 3, 4 BT: AP Difficulty: Easy TOT: 8 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

EXERCISE 2.13

(a) Predetermined overhead rate = Estimated overhead ÷ Estimated decorator hours
= $960,000 ÷ 40,000 decorator hours
= $24 per decorator hour

(b) Service Contracts in Process (40,500 hrs X $24)..... 972,000
Operating Overhead..... 972,000

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EXERCISE 2.13 (Continued)

(c)	**Actual overhead**	**$982,800**	**(DR)**
	Applied overhead	**972,000**	**(CR)**
	Balance (underapplied)	**$ 10,800**	**(DR)**

[$982,800 – (40,500 x $24) = $10,800]
[Act. OH – (Act. dec. hrs. x Predet. OH rate) = Underapp. OH]
LO3, 5 BT: AP Difficulty: Easy TOT: 8 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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SOLUTIONS TO PROBLEMS

PROBLEM 2.1

(a) $840,000 ÷ $700,000 direct labor costs = 120% of direct labor costs
($840,000 ÷ $700,000 = 120% of DL cost)
(Est. OH costs ÷ Est. DL cost = Predet. OH rate)

(b) See solution to part (e) for job cost sheets

(c)	**Raw Materials Inventory**	**90,000**	
	Accounts Payable		**90,000**
	Factory Labor	**70,000**	
	Payroll Liabilities		**54,000**
	Manufacturing Overhead	**28,000**	
	Accounts Payable		**16,000**
	Accumulated Depreciation—Equipment		**12,000**
(d)	**Work in Process Inventory**	**79,000**	
	Manufacturing Overhead	**17,000**	
	Raw Materials Inventory ($10,000 + $39,000 + $30,000 + $17,000)		**96,000**
	Work in Process Inventory	**50,000**	
	Manufacturing Overhead	**20,000**	
	Factory Labor ($5,000 + $25,000 + $20,000 + $20,000)		**70,000**
	Work in Process Inventory	**60,000**	
	Manufacturing Overhead ($50,000 x 120% of direct labor costs)		**60,000**

See solution to part (e) for postings to job cost sheets.

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PROBLEM 2.1 (Continued)

(b)&(e) **Job Cost Sheets**

Job No. 50

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Beg.	$20,000	$12,000	$16,000
Jan.	10,000	5,000	6,000*
	$30,000	$17,000	$22,000

Cost of completed job	
Direct materials	$30,000
Direct labor	17,000
Manufacturing overhead	22,000
Total cost	$69,000

***$5,000 x 120%**

[Job #50: $5,000 x 120% = $6,000]
[Job #50: DL cost x Predet. OH rate = App. OH]

Job No. 51

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$39,000	$25,000	$30,000**
	$39,000	$25,000	$30,000

Cost of completed job	
Direct materials	$39,000
Direct labor	25,000
Manufacturing overhead	30,000
Total cost	$94,000

****$25,000 x 120%**

[Job #51: $25,000 x 120% = $30,000]
[Job #51: DL cost x Predet. OH rate = App. OH]

Job No. 52

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$30,000	$20,000	$24,000***

*****$20,000 x 120%**

[Job #52: $20,000 x 120% = $24,000]
[Job #52: DL cost x Predet. OH rate = App. OH]

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PROBLEM 2.1 (Continued)

	Finished Goods Inventory	163,000	
	Work in Process Inventory ($69,000 + $94,000)		163,000
(f)	Accounts Receivable	280,000	
	Sales Revenue ($122,000 + $158,000)		280,000
	Cost of Goods Sold	159,000	
	Finished Goods Inventory ($90,000 + $69,000)		159,000

(g)

Finished Goods Inventory			
Beginning balance	90,000	159,000	Cost of jobs 49 and 50 sold
Cost of completed jobs 50 and 51	163,000		
Ending balance	94,000		

The balance in this account consists of the cost of completed Job No. 51 which has not yet been sold.

[$90,000 + ($69,000 + $94,000) – ($90,000 + $69,000) = $94,000]
[Beg. bal. + (Cost of compltd. jobs 50 & 51) – (Cost of jobs 49 & 50 sold) = End. bal.]

(h)

Manufacturing Overhead	
Actual	Applied
65,000	60,000
5,000	

The balance in the Manufacturing Overhead account is underapplied.

[$65,000 – ($6,000 + $30,000 + $24,000) = $5,000]
[Act. MOH – (MOH app. To jobs #50, #51, & #52) = MOH underapp.]
LO1, 2, 3, 4, 5 BT: AP Difficulty: Easy TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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PROBLEM 2.2

(a)

Work in Process Inventory

1/1	Balance (1)	128,400	Completed work (5) (c)	386,200
	Direct materials (2)	131,000		
	Direct labor (3)	139,000		
	Manufacturing overhead (4)	166,800		
12/31	Balance	179,000		

(1)

Job 7640	$ 77,800
Job 7641	50,600
	$128,400

(2)

Job 7640	$ 30,000
Job 7641	43,000
Job 7642	58,000
	$131,000

(3)

Job 7640	$ 36,000
Job 7641	48,000
Job 7642	55,000
	$139,000

(4)

Job 7640	$ 43,200
Job 7641	57,600
Job 7642	66,000
	$166,800

(5) (a) Job 7640

Beginning balance	$ 77,800
Direct materials	30,000
Direct labor	36,000
Manufacturing overhead	43,200
	$187,000

(b) Job 7641

Beginning balance	$ 50,600
Direct materials	43,000
Direct labor	48,000
Manufacturing overhead	57,600
	$199,200

(c) Total cost of completed work

Job 7640	$187,000
Job 7641	199,200
	$386,200

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PROBLEM 2.2 (Continued)

Work in process balance	**$179,000**
Unfinished job No. 7642	**$179,000***

* **Current year's cost**

Direct materials	**$ 58,000**
Direct labor	**55,000**
Manufacturing overhead	**66,000**
	$179,000

[($77,800 + $50,600) + ($30,000 + $43,000 + $58,000) + ($36,000 + $48,000 + $55,000) + ($43,200 + $57,600 + $66,000) – ($187,000 + $199,200) = $179,000]
[Beg. WIP bal. + DM + DL + App. OH – Cost of compltd. jobs 7640 & 7641 = End. WIP bal.]

(b) Actual overhead costs

Incurred on account	**$120,000**
Indirect materials	**14,000**
Indirect labor	**18,000**
Depreciation	**8,000**
	$160,000

Applied overhead costs

Job 7640	**$ 43,200**
Job 7641	**57,600**
Job 7642	**66,000**
	$166,800

Actual overhead	**$160,000**
Applied overhead	**166,800**
Overapplied overhead	**$ 6,800**

Manufacturing Overhead	**6,800**	
Cost of Goods Sold		**6,800**

[($120,000 + $14,000 + $18,000 + $8,000) – ($43,200 + $57,600 + $66,000) = $6,800]
[(OH incurred on acct. + Ind. Mat. + Ind. Labor + Depr.) – (App. OH to jobs #7640 + #7641 + #7642) = Overapp. OH]

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CINTA COMPANY
Income Statement (Partial)
For the Year Ended December 31, 2022

(c)	**Sales revenue (given)**		**$530,000**
	Cost of goods sold		
	Add: Job 7638	**$ 87,000**	
	Job 7639	**92,000**	
	Job 7641	**199,200**	
		378,200	
	Less: Overapplied overhead	**6,800**	**371,400**
	Gross profit		**$158,600**

LO1, 2, 3, 4, 5 BT: AP Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation, Reporting IMA: Cost Management, Reporting

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PROBLEM 2.3

(a)

(1)	Raw Materials Inventory	4,900	
	Accounts Payable		4,900
	Factory Labor	4,800	
	Cash		4,800
	Manufacturing Overhead	1,300	
	Accumulated Depreciation—Equipment		900
	Accounts Payable		400
(2)	Work in Process Inventory	4,900	
	Manufacturing Overhead	1,500	
	Raw Materials Inventory		6,400
	Work in Process Inventory	3,600	
	Manufacturing Overhead	1,200	
	Factory Labor		4,800
	Work in Process Inventory ($3,600 X 1.25)	4,500	
	Manufacturing Overhead		4,500
(3)	Finished Goods Inventory	14,740	
	Work in Process Inventory		14,740

Job	Direct Materials	Direct Labor	Manufacturing Overhead*	Total Costs
Rogers	$1,700	$1,560	$1,950	$ 5,210
Stevens	1,300	900	1,125	3,325
Linton	2,200	1,780	2,225	6,205
				$14,740

*125% X direct labor amount

	Cash	18,900	
	Sales revenue		18,900
	Cost of Goods Sold	14,740	
	Finished Goods Inventory		14,740

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PROBLEM 2.3 (Continued)

(b)

Work in Process Inventory

6/1	Balance	5,540	June	Completed work	14,740
	Direct materials	4,900			
	Direct labor	3,600			
	Overhead applied	4,500			
6/30	Balance	3,800			

(c) Work in Process Inventory $3,800

Job: Koss (Direct materials $2,000 + Direct labor $800 + Manufacturing overhead $1,000) $3,800

(d)

CASE INC.
Cost of Goods Manufactured Schedule
For the Month Ended June 30, 2022

Work in process, June 1		$ 5,540
Direct materials used	$4,900	
Direct labor	3,600	
Manufacturing overhead applied	4,500	
Total manufacturing costs		13,000
Total cost of work in process		18,540
Less: Work in process, June 30		3,800
Cost of goods manufactured		$14,740

[($5,540 + ($4,900 + $3,600 + $4,500)) - $3,800 = $14,740]
[(Beg. WIP + (DM used + DL + MOH app.)) – End. WIP = COGM]
LO1, 2, 3, 4, 5 BT: AP Difficulty: Easy TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation, Reporting IMA: Cost Management, Reporting

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PROBLEM 2.4

(a) **Department D:** $1,200,000 ÷ $1,500,000 = 80% of direct labor cost.
Department E: $1,500,000 ÷ 125,000 = $12.00 per direct labor hour.
Department K: $900,000 ÷ 120,000 = $7.50 per machine hour.

(b)

	Department		
Manufacturing Costs	**D**	**E**	**K**
Direct materials	$140,000	$126,000	$ 78,000
Direct labor	120,000	110,000	37,500
Overhead applied	96,000*	132,000**	78,000***
Total	$356,000	$368,000	$193,500

*$120,000 X 80%
**11,000 X $12.00
***10,400 X $7.50

(c)

	Department		
Manufacturing Overhead	**D**	**E**	**K**
Incurred	$99,000	$124,000	$79,000
Applied	96,000	132,000	78,000
Under (over) applied	$ 3,000	$ (8,000)	$ 1,000

[(D: $99,000 – ($120,000 x 80%) = $3,000); (E: $124,000 – (11,000 x $12) = ($8,000)); (K: $79,000 – (10,400 x $7.50) = $1,000)]
[(D: Act. MOH – (DL cost x Predet. MOH rate) = Underapp. MOH); (E: Act. MOH – (Act. DL hrs. x Predet. MOH rate) = Overapp. MOH); (K: Act. MOH – (Act. MH x Predet. MOH rate) = Underapp. MOH)]
LO3, 5 BT: AP Difficulty: Easy TOT: 25 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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PROBLEM 2.5

(a) $7,600 ($16,850 + $7,975 – $17,225).
($16,850 + $7,975 - $17,225 = $7,600)
(RM requisitions + RM end. bal. – RM purch. = RM beg. bal.)

(b) $36,000 [$9,750 + $15,000 + (75% X $15,000)]. (Given in other data).

(c) $13,950 ($16,850 – $2,900).
($16,850 - $2,900 = $13,950)
(RM requisitions – Ind. Mat. = DM)

(d) $6,300 ($8,400 X 75%).

(e) $12,200 [Given in other data—$3,800 + $4,800 + (75% X $4,800)].
[$3,800 + $4,800 + (75% x $4,800) = $12,200]
[Job 158: DM + DL cost + (Predet. MOH rate x DL cost) = End. bal. WIP]

(f) $52,450 ($36,000 + $13,950 + $8,400 + $6,300 – $12,200).
($36,000 + $13,950 + $8,400 + $6,300 - $12,200 = $52,450)
(Beg. bal. WIP + DM + DL + MOH app. – End. bal. WIP = Jobs completed]

(g) $5,000 (Given in other data).

(h) $52,450 (See (f) above).

(i) $53,450 ($5,000 + $52,450 – $4,000).
($5,000 + $52,450 - $4,000 = $53,450)
(Beg. bal. fin. gds. inv. + Jobs completed – End. bal. fin. gds. inv. = CGS)

(j) $4,000 (Given in other data).

(k) $12,025 (Equal to factory labor incurred).

(l) $3,625 ($12,025 – $8,400).

(m) $6,300 ($7,770* – $1,470) or (Same as (d)).

***$2,900 + $3,625 + $1,245**

LO1, 2, 3, 4, 5 BT: AN Difficulty: Complex TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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Cost for one kayak:

Direct Materials		
Polyethylene powder	**54 pounds @ $1.50 per pound**	**$ 81**
Finishing kit	**1 kit @ $170**	**170**
Direct Labor		
More skilled	**2 hours @ $15 per hour**	**30**
Less skilled	**3 hours @ $12 per hour**	**36**
Manufacturing overhead		
150% of direct labor costs	**150% x $66**	**99**
Total cost for one kayak		**$ 416**
Cost for order of 20 kayaks		
$416 per kayak x 20 kayaks		**$8,320**

LO2, 3 BT: AP Difficulty: Easy TOT: 10 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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(a)

JOB COST SHEET

Quantity 237 units
Job Number J57 **Date Requested Dec. 2**
Date Completed Dec. 15

Item special order parts

Date	Direct Materials	Direct Labor	Manufacturing Overhead		
			Hours	Rate	Amount
Dec. 2	$3,374				
Dec. 3		$66	2 1/2	$398*	$ 995
Dec. 8	706				
Dec. 9		66	3	398	1,194
Dec. 14	2,306				
Dec. 15		66	3	398	1,194

Cost Summary

Direct materials	$6,386
Direct labor	198
Manufacturing overhead	3,383
Total Cost	$9,967
Unit Cost ($9,967/237 units)	$42.05

*840,576 ÷ 2,112

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WC2 (Continued)

JOB COST SHEET

Quantity 142 units
Job Number K52 **Date Requested Dec. 2**
Date Completed Dec. 15

Item special order parts

Date	Direct Materials	Direct Labor	Manufacturing Overhead		
			Hours	Rate	Amount
Dec. 2	$1,687				
Dec. 3		$33	2	$398*	$796
Dec. 8	353				
Dec. 9		33	2	398	796
Dec. 14	1,153				
Dec. 15		33	2	398	796

Cost Summary

Direct materials	$3,193
Direct labor	99
Manufacturing overhead	2,388
Total Cost	$5,680
Unit Cost ($5,680/142 units)	$40.00

***840,576 ÷ 2,112**

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WC2 (Continued)

(b) **GENERAL JOURNAL**

		DEBIT	CREDIT
12/1	Raw Materials Inventory	53,200	
	Accounts Payable		53,200
	(Purchase of raw materials on account)		
12/2	Work in Process Inventory	5,061	
	Raw Materials Inventory		5,061
	(To assign materials to jobs J57 & K52)		
12/2	Work in Process Inventory	40,000	
	Manufacturing Overhead	3,000	
	Raw Materials Inventory		43,000
	(To assign materials to jobs and overhead)		
12/3	Work in Process Inventory	99	
	Factory Labor		99
	(To assign labor to jobs J57 & K52)		
12/3	Work in Process Inventory	1,791	
	Manufacturing Overhead		1,791
	(To assign overhead to jobs J57 & K52)		
12/8	Work in Process Inventory	1,059	
	Raw Materials Inventory		1,059
	(To assign materials to jobs J57 & K52)		

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WC2 (Continued)

GENERAL JOURNAL

		DEBIT	CREDIT
12/9	Work In Process Inventory	99	
	Factory Labor		99
	(To assign labor to jobs J57 & K52)		
12/9	Work in Process Inventory	1,990	
	Manufacturing Overhead		1,990
	(To assign overhead to jobs J57 & K52)		
12/12	Factory Labor	65,000	
	Cash		65,000
	(To record factory labor costs and payment)		
12/13	Manufacturing Overhead	9,000	
	Cash		9,000
	(To record payment of factory water bill)		
12/14	Work in Process Inventory	3,459	
	Raw Materials Inventory		3,459
	(To assign materials to jobs J57 & K52)		

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WC2 (Continued)

GENERAL JOURNAL

		DEBIT	CREDIT
12/15	Work In Process	99	
	Factory Labor		99
	(To assign labor to jobs J57 & K52		
12/15	Work in Process Inventory	1,990	
	Manufacturing Overhead		1,990
	(To assign overhead to jobs J57 & K52)		
12/15	Finished Goods Inventory	15,647	
	Work in Process Inventory		15,647
	(To record completion of jobs J57 & K52)		
12/18	Finished Goods Inventory	50,000	
	Work in Process Inventory		50,000
	(To record completion of jobs)		
12/21	Manufacturing Overhead	12,000	
	Cash		12,000
	(To record payment of factory electric bill)		

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WC2 (Continued)

GENERAL JOURNAL

		DEBIT	CREDIT
12/31	Manufacturing Overhead	36,800	
	Property Taxes Payable		12,000
	Prepaid Insurance		8,800
	Accumulated Depreciation		16,000
	(To record overhead costs)		
(c) 12/31	Cost of Goods Sold	3,600	
	Manufacturing Overhead*		3,600
	(To transfer underapplied overhead to cost of goods sold)		

(d) Since production involved the use of machinery that required minimal labor, using machine hours as the cost driver for producing the sprinkler heads would more accurately reflect the overhead costs than would direct labor.

When the irrigation system is installed, this would require a great deal of labor and minimal machinery. Therefore, the cost driver for overhead costs would more likely be direct labor costs.

LO2, 3, 5 BT: AP Difficulty: Moderate TOT: 40 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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SOLUTIONS TO DATA ANALYTICS IN ACTION

The solutions for the Data Analytics in Action problems are available in Excel. See the file Solutions: Excel Templates in the Instructor Resources.

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CT2.1 DECISION-MAKING ACROSS THE ORGANIZATION

(a) The manufacturing cost element that is responsible for the fluctuating unit costs is manufacturing overhead. Manufacturing overhead is being included as incurred rather than being applied on a predetermined basis. Direct materials and direct labor are not the cause as they have the same unit cost per batch in each quarter.

(b) The solution is to apply overhead using a predetermined overhead rate based on a relevant basis of production activity. Based on actual overhead incurred and using batches of product TC-1 as the activity base, the overhead rate is $16,000 per batch [($105,000 + $153,000 + $97,000 + $125,000) ÷ 30]. Another approach would be to use direct labor cost as the relevant basis to apply overhead on a predetermined basis. For example, a rate of 133 1/3% of direct labor cost ($480,000 ÷ $360,000) could be used. Either approach will provide the same result.

(c) The quarterly results using a predetermined overhead rate based on batches produced are as follows:

		Quarter			
Costs		**1**	**2**	**3**	**4**
Direct materials		$100,000	$220,000	$ 80,000	$200,000
Direct labor		60,000	132,000	48,000	120,000
Manufacturing overhead Applied ($16,000 X batches)		80,000	176,000	64,000	160,000
Total	(a)	$240,000	$528,000	$192,000	$480,000
Production in batches	(b)	5	11	4	10
Unit cost (per batch) (a) ÷ (b)		$ 48,000	$ 48,000	$ 48,000	$ 48,000

(Note: The unit cost of a batch remains the same in each quarter. Both sales and production should be pleased with this solution to fluctuating unit costs.)

LO2, 3 BT: E Difficulty: Moderate TOT: 20 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation IMA: Cost Management

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1. (a)

Work in Process Inventory	25,000	
Raw Materials Inventory		25,000

(b) If not corrected, the balance sheet is affected. Cash is understated and Raw Materials Inventory is overstated.

2. (a)

Sales Bonus Expense	12,000	
Cash		12,000

(b) The income statement would be affected because the Cost of Goods Sold account would be overstated due to the Manufacturing Overhead account being underapplied (more actual overhead charges then overhead applied), causing Gross Profit to be understated. However, Sales Bonus Expense, an operating expense, would be understated be the same amount, causing an increase in net income to offset the understatement in Gross Profit. Therefore, net income would be unaffected. There would be no effect on the balance sheet.

3. (a)

Manufacturing Overhead	3,000	
Raw Materials Inventory		3,000

(b) The income statement would not be affected because both the overstatement in Work in Process Inventory (and subsequently Finished Goods Inventory) and the understatement in Manufacturing Overhead would be washed out (offsetting each other) through the Cost of Goods account. Therefore, net income would be unaffected. Likewise there would be no effect on the balance sheet.

LO2, 3, 5 BT: AN Difficulty: Moderate TOT: 30 min. AACSB: Analytic AICPA FC: Measurement Analysis and Interpretation, Reporting AICPA PC: Communication IMA: Cost Management, Reporting

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(a) Candidates for the CMA or CFM Certificate must complete two continuous years of professional experience in management accounting or financial management. This requirement may be completed prior to or within seven years of passing the examination.

(b) CMAs, CFMs, and candidates who have completed the CMA and/or the CFM examination but have not yet met the experience requirement, are required to maintain their proficiency in the fields of management accounting and financial management. This includes knowledge of new concepts and techniques as well as their application in the management accounting and financial management professions. The objective is to maintain the professional competence of the individual and to enhance one's ability to perform job-related requirements. Persons who have retired need not meet continuing education requirements. The continuing requirement is 30 hours per year and at least 2 of those hours must be ethics-related.

A broad range of subjects may be included in the programs for which hours of credit will be given. The subjects should be related to the topics covered on the CMA/CFM examination and/or to an individual's job responsibilities. Illustrative of the subjects that may qualify are: all aspects of accounting, financial management, business applications of mathematics and statistics, computer science, economics, management, production, marketing, business law, and organizational behavior.

LO N/A BT: C Difficulty: Easy TOT: 20 min AACSB: Technology, Communication AICPA FC: Reporting AICPA PC: Communication IMA: None

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CT2.4 COMMUNICATION ACTIVITY

Williams Company
Date

Nancy Kopay
123 Cedar Lane
Altoona, Kansas 66651

Dear Ms. Kopay:

Thank you for your prompt payment! I am very glad that you found the cost information helpful.

Thank you also for your questions about our overhead costs. We do try to provide our customers with as much information as possible, but we cannot give detailed information on overhead costs. The cost of providing such information is prohibitive.

You asked why we do not use actual overhead costs when we bill our customers. We estimate overhead costs, rather than use actual costs, for several reasons. One of the most important reasons for you is that we could not prepare bills in a timely manner if we had to use actual overhead. We would have to wait until we were billed for such things as electricity and telephone service. A second reason is that some costs we include in overhead are only payable once or twice a year, such as insurance and taxes. When we use an estimated rate, we are able to allow for those costs. A third reason is that some costs are fixed, which means that they stay the same in dollar amount from month to month. This category includes items such as rent. If we billed you based on our actual costs, you would be billed a higher amount if your work was done during a slow time (because we would have fewer jobs to spread the costs over). An estimated overhead rate allows us to level out these costs.

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CT2.4 (Continued)

I hope this answers some of your questions. I'm glad you are interested in our company and that you took the time to write. I am sending a copy of our annual report under separate cover. It contains some details on the information you asked about.

Thanks again for your letter and for having Williams make your new cabinets!

Sincerely,

Student

LO3 BT: C Difficulty: Easy TOT: 20 min. AACSB: Communication AICPA FC: Measurement Analysis and Interpretation, Reporting AICPA PC: Communication IMA: Cost Management, Reporting

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CT2.5 ETHICS CASE

(a) The stakeholders in this situation are:

- **Alice Reiley, controller for LRF Printing.**
- **The president of LRF Printing.**
- **The customers of LRF Printing.**
- **The competitors of LRF Printing.**

(b) Padding cost-plus contracts is both unethical and illegal. Alice is faced with an ethical dilemma. She will be in trouble with the president if she doesn't follow his directive, and she will be committing an unethical act if she does follow his instructions.

(c) Alice should continue to accurately account for cost-plus contracts and, if challenged by the president, she should say that she is doing her very best to charge each and every legitimate cost to the cost-plus contracts.

LO N/A BT: E Difficulty: Easy TOT: 15 min. AACSB: Ethics AICPA FC: Reporting AICPA PC: Ethical Conduct, Communication IMA: Business Applications

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CT2.6 ALL ABOUT YOU

The 10 steps for starting a business are:

1. **Conduct market research**
2. **Write your business plan**
3. **Fund your business**
4. **Pick your business location**
5. **Choose a business structure**
6. **Choose your business name**
7. **Register your business**
8. **Get federal and state tax IDs**
9. **Apply for licenses and permits**
10. **Open a business bank account**

LO N/A BT: E Difficulty: Easy TOT: 15 min. AACSB: Technology AICPA FC: Reporting AICPA PC: Communication IMA: Reporting

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CT2.7 CONSIDERING YOUR COSTS AND BENEFITS

Discussion guide: The situation presented is a difficult one because you are presently receiving some help for free. It would seem that the best strategy is to price your services based on what it would cost you to do the landscape business without any free help. In the long run, it is going to be impossible to continue unless you can cover these costs. In addition, if you underprice your services today, your customers may expect your prices will remain as low in the future. That probably cannot happen, given that your costs will increase substantially after the first two years. However, we should note that it is not unusual to start a small business with some assets available to you. Then, as your business grows, you acquire additional assets to meet your needs. After all, you may need a low price to get started, and as you gain experience you will be able to charge more or become more efficient.

So what to do? Let's address your old truck first. You should treat the truck as an asset owned by your business. Record it on your books at its fair value, and depreciate it over a reasonable life. This will result in an overhead charge. You need to cover the cost of that truck, as you will have to buy another one someday. The land, barn, and your mother's services are a little more difficult. If you rented the land and barn and if you paid an assistant, all of these costs would be charged to overhead. (The assistant would be indirect labor.) You are currently getting all these services for free. This is a good situation now, and you may need this situation early in your business to help you get started. But you should recognize that even if you run your business profitably for the first two years, you may have problems beginning in the third year. Thus, it would seem prudent to establish a budget based on both scenarios for the first two years. If you can charge based on your expected costs in the future, do so. If that is not realistic, because you need to establish yourself and get more experience, then charge less. But be sure from the start to cover a reasonable amount of your costs, or the business does not make sense for you financially.

LO2, 3, 4 BT: E Difficulty: Moderate TOT: 25 min. AACSB: Reflective Thinking, Communication AICPA FC: Measurement Analysis and Interpretation, Reporting, AICPA PC: Communication IMA: Cost Management, Reporting

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CHAPTER 2

SOLUTIONS TO EXERCISES—SET B

EXERCISE 2-1B

(a)	Factory Labor	77,000	
	Factory Wages Payable		61,000
	Employer Payroll Taxes Payable		9,600
	Employer Fringe Benefits Payable		6,400
(b)	Work in Process Inventory ($77,000 X 80%)	61,600	
	Manufacturing Overhead	15,400	
	Factory Labor		77,000

EXERCISE 2-2B

(a)	May 31	Work in Process Inventory	10,500	
		Manufacturing Overhead	1,800	
		Raw Materials Inventory		12,300
	31	Work in Process Inventory	12,800	
		Manufacturing Overhead	1,950	
		Factory Labor		14,750
	31	Work in Process Inventory ($12,800 X 80%)	10,240	
		Manufacturing Overhead		10,240
	31	Finished Goods Inventory	8,460	
		Work in Process Inventory ($2,000 + $2,500 + $2,200 + $1,760)*		8,460

*$2,200 X 80%

(b)

Work in Process Inventory

May	1	Balance	3,200	May 31	8,460
	31		10,500		
	31		12,800		
	31		10,240		
May	31	Balance	28,280		

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EXERCISE 2-2B (Continued)

Job Cost Sheets

Job No.	Beginning Work in Process	Direct Material	Direct Labor	Manufacturing* Overhead	Total
430	$1,200	$3,600	$ 3,000	$2,400	$10,200
431	0	4,400	7,600	6,080	18,080
	$1,200	$8,000	$10,600	$8,480	$28,280

*Direct labor X .80

EXERCISE 2-3B

(a) 1. $14,305, or ($4,105 + $6,000 + $4,200).

2. Last year 70%, or ($4,200 ÷ $6,000); this year 75% (either $6,375 ÷ $8,500 or $3,000 ÷ $4,000).

(b)	Jan. 31	Work in Process Inventory.....	8,000	
		Raw Materials Inventory ($6,000 + $2,000).....		8,000
	31	Work in Process Inventory.....	12,500	
		Factory Labor ($8,500 + $4,000).....		12,500
	31	Work in Process Inventory.....	9,375	
		Manufacturing Overhead ($6,375 + $3,000).....		9,375
	31	Finished Goods Inventory.....	44,180	
		Work in Process Inventory		44,180

EXERCISE 2-4B

(a) + $50,000 + $37,500 = $135,650
(a) = $48,150

$135,650 + (b) = $213,300
(b) = $77,650

$213,300 – (c) = $193,200
(c) = $20,100

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EXERCISE 2-4B (Continued)

[Note: The instructions indicate that manufacturing overhead is applied on the basis of direct labor cost, and the rate is the same in all cases. From Case A, a student should note the overhead rate to be 75%, or ($37,500 ÷ $50,000).]

(d) = .75 X $120,000
(d) = $90,000

$78,000 + $120,000 + $90,000 = (e)
(e) = $288,000

$288,000 + $15,500 = (f)
(f) = $303,500

$303,500 – $11,800 = (g)
(g) = $291,700

[Note: (h) and (i) are solved together.]

(i) = .75(h)
$72,600 + (h) + .75(h) = $212,600
1.75(h) = $140,000
(h) = $80,000
(i) = $60,000

(j) = $212,600 + $25,050
(j) = $237,650

$237,650 – (k) = $222,000
(k) = $15,650

EXERCISE 2-5B

(a) $2.56 per machine hour ($320,000 ÷ 125,000) = Over/underapplied

(b) ($308,000) – ($2.56 x 130,000 Machine Hours)
$308,000 – $332,800 = $24,800 overapplied

(c)	**Operating Overhead**	**24,800**	
	Cost of Goods Sold		**24,800**

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EXERCISE 2-6B

(a) (1) The source documents are:

Direct materials—Materials requisition slips.
Direct labor—Time tickets.
Manufacturing overhead—Predetermined overhead rate.

(2) The predetermined overhead rate is 140% of direct labor cost. For example, on July 15, the computation is $560 ÷ $400 = 140%. The same result is obtained on July 22 and 31.

(3) The total cost is:

Direct materials	$4,965
Direct labor	1,250
Manufacturing overhead	1,750
	$7,965

The unit cost is $3.98 ($7,965 ÷ 2,000).

(b)	July 31	Finished Goods Inventory	7,965	
		Work in Process Inventory		7,965

EXERCISE 2-7B

1.	Raw Materials Inventory	45,235	
	Accounts Payable		45,235
2.	Work in Process Inventory	29,600	
	Manufacturing Overhead	6,300	
	Raw Materials Inventory		35,900
3.	Factory Labor	56,900	
	Factory Wages Payable		52,000
	Employer Payroll Taxes Payable		4,900
4.	Work in Process Inventory	49,000	
	Manufacturing Overhead	7,900	
	Factory Labor		56,900

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EXERCISE 2-7B (Continued)

5.	Manufacturing Overhead	80,500	
	Accounts Payable.....		80,500
6.	Work in Process Inventory ($49,000 X 120%).....	58,800	
	Manufacturing Overhead.....		58,800
7.	Finished Goods Inventory	88,000	
	Work in Process Inventory.....		88,000
8.	Accounts Receivable	119,300	
	Sales.....		119,300
	Cost of Goods Sold.....	83,000	
	Finished Goods Inventory.....		83,000

EXERCISE 2-8B

1.	Raw Materials Inventory	213,000	
	Accounts Payable.....		213,000
	Factory Labor	92,000	
	Factory Wages Payable.....		92,000
2.	Work in Process Inventory	153,530	
	Manufacturing Overhead	4,800	
	Raw Materials Inventory.....		158,330
	Work in Process Inventory	84,500	
	Manufacturing Overhead	7,500	
	Factory Labor.....		92,000
3.	Manufacturing Overhead	59,500	
	Accounts Payable.....		59,500
4.	Manufacturing Overhead	14,550	
	Accumulated Depreciation—Machinery and Equipment.....		14,550

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EXERCISE 2-8B (Continued)

5.	Work in Process Inventory	59,150	
	Manufacturing Overhead (70% X $84,500)		59,150
6.	Finished Goods Inventory	232,180	
	Work in Process Inventory		232,180

Computation of cost of jobs finished:

Job	Direct Materials	Direct Labor	Manufacturing Overhead	Total
A20	$33,240	$18,500	$12,950	$ 64,690
A21	42,920	24,000	16,800	83,720
A23	41,270	25,000	17,500	83,770
				$232,180

EXERCISE 2-9B

(a)

ANDRES MANUFACTURING COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2017

Work in process, May 1		$ 18,800
Direct materials used	$54,200	
Direct labor	32,000	
Manufacturing overhead applied	40,000	
Total manufacturing costs		126,200
Total cost of work in process		145,000
Less: Work in process, May 31		17,900
Cost of goods manufactured		$127,100

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EXERCISE 2-9B (Continued)

(b)

ANDRES MANUFACTURING COMPANY
(Partial) Income Statement
For the Month Ended May 31, 2017

Sales		$200,000
Cost of goods sold		
Finished goods, May 1	$ 12,600	
Cost of goods manufactured	127,100	
Cost of goods available for sale	139,700	
Finished goods, May 31	15,400	
Cost of goods sold		124,300
Gross profit		$ 75,700

(c) In the May 31 balance sheet, the manufacturing inventories will be reported in current assets as follows: Finished Goods $15,400, Work in Process $17,900, and Raw Materials $7,100.

EXERCISE 2-10B

(a) Work in Process Inventory

April 30	$11,300	(#10, $7,200 + #11, $4,100)
May 31	$19,300	(#11, $8,000 + #13, $4,700 + #14, $6,600)
June 30	$9,800	(#14, $6,600 + $3,200)

(b) Finished Goods Inventory

April 30	$1,200	(#12)
May 31	$11,600	(#10)
June 30	$19,100	(#11, $11,000 + #13, $8,100)

(c) Gross Profit

Month	Job Number	Sales	Cost of Goods Sold	Gross Profit
May	12	$ 1,560	$ 1,200	$ 360
June	10	15,080	11,600	3,480
July	11/13	24,830	19,100	5,730

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EXERCISE 2-11B

(a)

Transaction Number	Accounts Titles	Debit	Credit
1	Supplies	1,795	
	Accounts Payable		1,795
2	Work in Process	700	
	Operating Overhead	300	
	Supplies		1,000
3	Work in Process	41,250	
	Operating Overhead	13,750	
	Salaries Payable		55,000
4	Operating Overhead	30,000	
	Cash		30,000
5	Work in Process ($41,250 X 80%)	33,000	
	Operating Overhead		33,000
6	Cost of Completed Work	68,000	
	Work in Process		68,000

(b)

Work in Process

2.	700	68,000	6.
3.	41,250		
5.	33,000		
	6,950		

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EXERCISE 2-12B

(a)	Manson	Walker	Barton
Direct materials	$ 650	$ 350	$ 200
Auditor labor costs	5,400	6,600	3,375
Applied overhead	3,900	4,800	1,800
Total cost	$9,950	$11,750	$5,375

(b) The Barton job is the only incomplete job, therefore, $5,375.

(c) Applied overhead	$ 10,500	(CR)
Actual overhead	(10,000)	(DR)
Balance	$ 500	(CR)

EXERCISE 2-13B

(a) Predetermined overhead rate = Budgeted overhead ÷ Budgeted decorator hours
= $850,000 ÷ 50,000 decorator hours
= $17 per decorator hour

(b) Applied overhead

Work in Process (52,000 hrs X $17).....	884,000	
Operating Overhead		884,000

(c) Applied overhead	$ 884,000	
Actual overhead	(879,000)	
Balance	$ 5,000	overapplied

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CHAPTER 2
SOLUTIONS TO PROBLEMS: SET B

PROBLEM 2-1B

(a) $440,000 ÷ 20,000 direct labor hours = $22 per direct labor hour

(b) See solution to part (e) for job cost sheets

(c)

Raw Materials Inventory	45,000	
Accounts Payable		45,000
Factory Labor	33,500	
Employer Payroll Taxes Payable		7,500
Factory Wages Payable		26,000
Manufacturing Overhead	42,500	
Accumulated Depreciation—Equipment		12,000
Accounts Payable		11,000
Raw Materials Inventory		10,000
Factory Labor		9,500

(d)

Work in Process Inventory	35,000	
Raw Materials Inventory ($5,000 + $17,000 + $13,000)		35,000
Work in Process Inventory	24,000	
Factory Labor ($3,000 + $12,000 + $9,000)		24,000
Work in Process Inventory	35,200	
Manufacturing Overhead (200 + 800 + 600) X $22 per hour		35,200

See solution to part (e) for postings to job cost sheets.

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PROBLEM 2-1B (Continued)

(e) **Job Cost Sheets**

Job No. 25

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Beg.	$10,000	$6,000	$ 9,000
Jan.	5,000	3,000	4,400*
	$15,000	$9,000	$13,400

Cost of completed job	
Direct materials	$15,000
Direct labor	9,000
Manufacturing overhead	13,400
Total cost	$37,400

*$22 X 200 direct labor hours

Job No. 26

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$17,000	$12,000	$17,600**
	$17,000	$12,000	$17,600

Cost of completed job	
Direct materials	$17,000
Direct labor	12,000
Manufacturing overhead	17,600
Total cost	$46,600

**$22 X 800 direct labor hours

Job No. 27

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$13,000	$9,000	$13,200***

***$22 X 600 direct labor hours

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PROBLEM 2-1B (Continued)

	Finished Goods Inventory	84,000	
	Work in Process Inventory ($37,400 + $46,600)		84,000
(f)	Accounts Receivable	137,000	
	Sales Revenue ($63,000 + $74,000)		137,000
	Cost of Goods Sold	79,400	
	Finished Goods Inventory ($42,000 + $37,400)		79,400

(g)

Work in Process			
Beginning balance	25,000	84,000	Cost of completed jobs 25 and 26
Direct materials	35,000		
Direct labor	24,000		
Manufacturing overhead	35,200		
Ending balance	35,200		

The balance in this account consists of the current costs assigned to Job No. 27:

Direct Materials	$13,000
Direct Labor	9,000
Manufacturing Overhead	13,200
Total costs assigned	$35,200

(h)

Manufacturing Overhead	
Actual	Applied
42,500	35,200
7,300	

The balance in the Manufacturing Overhead account is underapplied.

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PROBLEM 2-2B

(a)

Work in Process Inventory

1/1	Balance (1)	111,000	Completed work (5) (c)	344,000
	Direct materials (2)	97,000		
	Direct labor (3)	144,000		
	Manufacturing overhead (4)	180,000		
12/31	Balance	188,000		

(1)	Job 7650	$ 63,000	(3)	Job 7650	$ 36,000
	Job 7651	48,000		Job 7651	40,000
		$111,000		Job 7652	68,000
					$144,000
(2)	Job 7650	$ 32,000	(4)	Job 7650	$ 45,000
	Job 7651	30,000		Job 7651	50,000
	Job 7652	35,000		Job 7652	85,000
		$ 97,000			$180,000

(5) (a) Job 7650

Beginning balance	$ 63,000
Direct materials	32,000
Direct labor	36,000
Manufacturing overhead	45,000
	$176,000

(b) Job 7651

Beginning balance	$ 48,000
Direct materials	30,000
Direct labor	40,000
Manufacturing overhead	50,000
	$168,000

(c) Total cost of completed work

Job 7650	$176,000
Job 7651	168,000
	$344,000

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PROBLEM 2-2B (Continued)

Work in process balance		$188,000
Unfinished job No. 7652		$188,000 (a)

(a) Current year's cost

Direct materials	$ 35,000
Direct labor	68,000
Manufacturing overhead	85,000
	$188,000

(b) Actual overhead costs

Incurred on account	$135,000
Indirect materials	12,000
Indirect labor	16,000
Depreciation	19,500
	$182,500

Applied overhead costs

Job 7650	$ 45,000
Job 7651	50,000
Job 7652	85,000
	$180,000

Actual overhead	$182,500
Applied overhead	180,000
Underapplied overhead	$ 2,500

Cost of Goods Sold	2,500	
Manufacturing Overhead		2,500

(c)

Sales revenue (given)		$490,000
Cost of goods sold		
Add: Job 7648	$ 93,000	
Job 7649	62,000	
Job 7650	176,000	
	331,000	
Add: Underapplied overhead	2,500	333,500
Gross profit		$156,500

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PROBLEM 2-3B

(a)

(i)	Raw Materials Inventory	4,000	
	Accounts Payable		4,000
	Factory Labor	7,000	
	Cash		7,000
	Manufacturing Overhead	1,400	
	Cash		1,400
(ii)	Work in Process Inventory	5,300	
	Manufacturing Overhead	1,500	
	Raw Materials Inventory		6,800
	Work in Process Inventory	5,000	
	Manufacturing Overhead	2,000	
	Factory Labor		7,000
	Work in Process Inventory ($5,000 X .70)	3,500	
	Manufacturing Overhead		3,500
(iii)	Finished Goods Inventory	20,190	
	Work in Process Inventory		20,190

Job	Direct Materials	Direct Labor	Manufacturing Overhead*	Total Costs
Stiner	$3,000	$2,400	$1,680	$ 7,080
Alton	2,600	2,200	1,540	6,340
Herman	3,200	2,100	1,470	6,770
				$20,190

*70% of direct labor amount

	Cash	36,000	
	Sales Revenue (3 X $12,000)		36,000
	Cost of Goods Sold	20,190	
	Finished Goods Inventory		20,190

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PROBLEM 2-3B (Continued)

(b)

Work in Process Inventory

5/1	Balance	12,200	5/31	Completed work	20,190
	Direct materials	5,300			
	Direct labor	5,000			
	Overhead applied	3,500			
5/31	Balance	5,810			

(c) Work in Process Inventory $5,810

Job: Smith (Direct materials $1,900 + Direct labor $2,300 + Manufacturing overhead $1,610) $5,810

(d)

ROBERT PEREZ COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2017

Work in process, May 1		$12,200
Direct materials used	$5,300	
Direct labor	5,000	
Manufacturing overhead applied	3,500	
Total manufacturing costs		13,800
Total cost of work in process		26,000
Less: Work in process, May 31		5,810
Cost of goods manufactured		$20,190

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PROBLEM 2-4B

(a) **Department A:** $720,000 ÷ $600,000 = 120% of direct labor cost.
Department B: $640,000 ÷ 40,000 = $16.00 per direct labor hour.
Department C: $900,000 ÷ 150,000 = $6.00 per machine hour.

(b)

	Department		
Manufacturing Costs	**A**	**B**	**C**
Direct materials	$ 92,000	$ 86,000	$ 64,000
Direct labor	48,000	35,000	50,400
Overhead applied	57,600*	56,000**	75,600***
Total	$197,600	$177,000	$190,000

*$48,000 X 120%
**3,500 X $16
***12,600 X $6.00

(c)

	Department		
Manufacturing Overhead	**A**	**B**	**C**
Incurred	$60,000	$60,000	$72,100
Applied	57,600	56,000	75,600
Under (over) applied	$ 2,400	$ 4,000	$ (3,500)

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PROBLEM 2-5B

(a) $88,900 ($80,000 + $8,900).

(b) $20,500 [($19,000 + $90,400) – $88,900 (See (a))].

(c) $27,200 (Given in Other data—$19,000 + $8,200).

(d) $90,000 ($117,000 manufacturing overhead applied ÷ 130%).

(e) $117,000 (Manufacturing overhead applied).

(f) $308,750 [$27,200 + $80,000 + $90,000 + $117,000 – $5,450 (See (g))].

(g) $5,450 [$2,000 + $1,500 + ($1,500 X 130%)].

(h) $145,000 (Given in Other data).

(i) $308,750 (Same as (f)).

(j) $315,750 [$145,000 + $308,750 – $138,000 (Given in Other data)].

(k) $138,000 (Given in Other data).

(l) $106,000 [$90,000 (See (d)) + $16,000].

(m) $106,000 (Same as (l)).

(n) $95,100 [$117,000 + $3,000 (Given in Other data) – $8,900 – $16,000].

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CHAPTER 2

SOLUTIONS TO PROBLEMS—SET C

PROBLEM 2-1C

(a) $450,000 ÷ 20,000 direct labor hours = $22.50 per direct labor hour

(b) See solution to part (e) for job cost sheets

(c)	**Raw Materials Inventory**	**46,000**	
	Accounts Payable		**46,000**
	Factory Labor	**31,900**	
	Employer Payroll Taxes Payable		**7,000**
	Factory Wages Payable		**24,900**
	Manufacturing Overhead	**40,500**	
	Raw Materials Inventory		**10,000**
	Factory Labor		**7,500**
	Accumulated Depreciation		**12,000**
	Accounts Payable		**11,000**
(d)	**Work in Process Inventory**	**33,000**	
	Raw Materials Inventory ($5,000 + $15,000 + $13,000)		**33,000**
	Work in Process Inventory	**24,900**	
	Factory Labor ($3,000 + $12,000 + $9,900)		**24,900**
	Work in Process Inventory	**37,350**	
	Manufacturing Overhead (200 + 800 + 660) X $22.50 per hour		**37,350**

See solution to part (e) for postings to job cost sheets.

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PROBLEM 2-1C (Continued)

(e)

Job Cost Sheets

Job No. 25

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Beg.	$10,000	$6,000	$ 9,000
Jan.	5,000	3,000	4,500*
	$15,000	$9,000	$13,500

Cost of completed job	
Direct materials	$15,000
Direct labor	9,000
Manufacturing overhead	13,500
Total cost	$37,500

*$22.50 X 200 direct labor hours

Job No. 26

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$15,000	$12,000	$18,000**
	$15,000	$12,000	$18,000

Cost of completed job	
Direct materials	$15,000
Direct labor	12,000
Manufacturing overhead	18,000
Total cost	$45,000

**$22.50 X 800 direct labor hours

Job No. 27

Date	Direct Materials	Direct Labor	Manufacturing Overhead
Jan.	$13,000	$9,900	$14,850***

***$22.50 X 660 direct labor hours

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	Finished Goods Inventory	82,500	
	Work in Process Inventory ($37,500 + $45,000)		82,500
(f)	Cost of Goods Sold	82,500	
	Finished Goods Inventory ($45,000 + $37,500)		82,500
	Accounts Receivable	139,000	
	Sales Revenue ($65,000 + $74,000)		139,000

(g)

Work in Process			
Beginning balance	25,000	82,500	Cost of completed jobs 25 and 26
Direct materials	33,000		
Direct labor	24,900		
Manufacturing overhead	37,350		
Ending balance	37,750		

The balance in this account consists of the current costs assigned to Job No. 27:

Direct Materials	$13,000
Direct Labor	9,900
Manufacturing Overhead	14,850
Total costs assigned	$37,750

(h)

Manufacturing Overhead	
Actual	Applied
40,500	37,350
3,150	

The balance in the Manufacturing Overhead account is underapplied.

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PROBLEM 2-2C

(a)

Work in Process Inventory

1/1	Balance (1)	113,000	Completed work (5) (c)	347,000
	Direct materials (2)	105,000		
	Direct labor (3)	141,000		
	Manufacturing overhead (4)	175,000		
12/31	Balance	187,000		

(1)	Job 50	$ 65,000	(3)	Job 50	$ 37,000
	Job 51	48,000		Job 51	40,000
		$113,000		Job 52	64,000
					$141,000
(2)	Job 50	$ 32,000	(4)	Job 50	$ 45,000
	Job 51	30,000		Job 51	50,000
	Job 52	43,000		Job 52	80,000
		$105,000			$175,000

(5) (a) Job 50

Beginning balance	$ 65,000
Direct materials	32,000
Direct labor	37,000
Manufacturing overhead	45,000
	$179,000

(b) Job 51

Beginning balance	$ 48,000
Direct materials	30,000
Direct labor	40,000
Manufacturing overhead	50,000
	$168,000

(c) Total cost of completed work

Job 50	$179,000
Job 51	168,000
	$347,000

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PROBLEM 2-2C (Continued)

Work in process balance			$187,000
Unfinished job No. 52			$187,000 (a)
(a) Current year's cost			
Direct materials	$ 43,000		
Direct labor	64,000		
Manufacturing overhead	80,000		
	$187,000		
(b) Actual overhead costs			
Incurred on account			$121,000
Indirect materials			12,000
Indirect labor			18,000
Depreciation			19,500
			$170,500
Applied overhead costs			
Job 50			$ 45,000
Job 51			50,000
Job 52			80,000
			$175,000
Actual overhead			$170,500
Applied overhead			175,000
overapplied overhead			$ 4,500
Manufacturing Overhead		4,500	
Cost of Goods Sold			4,500
(c) Sales (given)			$500,000
Cost of goods sold			
Add: Job 48		$ 87,000	
Job 49		65,000	
Job 50		179,000	
		331,000	
Less: overapplied overhead		4,500	326,500
Gross profit			$173,500

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PROBLEM 2-3C

(a)

(i)	Raw Materials Inventory	4,300	
	Accounts Payable		4,300
	Factory Labor	8,200	
	Cash		8,200
	Manufacturing Overhead	1,600	
	Cash		1,600
(ii)	Work in Process Inventory	5,500	
	Manufacturing Overhead	1,500	
	Raw Materials Inventory		7,000
	Work in Process Inventory	5,600	
	Manufacturing Overhead	2,000	
	Factory Labor		7,600
	Work in Process Inventory ($5,600 X .80)	4,480	
	Manufacturing Overhead		4,480
(iii)	Finished Goods Inventory	21,540	
	Work in Process Inventory		21,540

Job	Direct Materials	Direct Labor	Manufacturing Overhead*	Total Costs
Clark	$3,100	$2,500	$2,000	$ 7,600
Douglas	2,800	2,200	1,760	6,760
Evans	3,400	2,100	1,680	7,180
				$21,540

*80% of direct labor amount

	Cash	45,000	
	Sales Revenue (3 X $15,000)		45,000
	Cost of Goods Sold	21,540	
	Finished Goods Inventory		21,540

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(b)

Work in Process Inventory

5/1	Balance	13,080	5/31	Completed work	21,540
	Direct materials	5,500			
	Direct labor	5,600			
	Overhead applied	4,480			
5/31	Balance	7,120			

(c)

Work in Process Inventory	$7,120
Job: Franz (Direct materials $1,900 + Direct labor $2,900 + Manufacturing overhead $2,320)	$7,120

(d)

VICTOR RAMOS COMPANY
Cost of Goods Manufactured Schedule
For the Month Ended May 31, 2017

Work in process, May 1		$13,080
Direct materials used	$5,500	
Direct labor	5,600	
Manufacturing overhead applied	4,480	
Total manufacturing costs		15,580
Total cost of work in process		28,660
Less: Work in process, May 31		7,120
Cost of goods manufactured		$21,540

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PROBLEM 2-4C

(a) Department A: $825,000 ÷ $550,000 = 150% of direct labor cost.
Department B: $600,000 ÷ 40,000 = $15.00 per direct labor hour.
Department C: $797,500 ÷ 110,000 = $7.25 per machine hour.

(b)

	Department		
Manufacturing Costs	A	B	C
Direct materials	$ 92,000	$ 98,000	$ 64,000
Direct labor	52,000	35,000	50,400
Overhead applied	78,000*	52,500**	91,350***
Total	$222,000	$185,500	$205,750

*$52,000 X 150%
**3,500 X $15
***12,600 X $7.25

(c)

	Department		
Manufacturing Overhead	A	B	C
Incurred	$ 76,000	$55,000	$92,000
Applied	78,000	52,500	91,350
Under (over) applied	$ (2,000)	$ 2,500	$ 650

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PROBLEM 2-5C

(a) $89,000 ($78,000 + $11,000).

(b) $20,500 [($17,000 + $92,500) – $89,000 (See (a))].

(c) $36,300 (Given in other data—$21,000 + $15,300).

(d) $95,000 ($133,000 manufacturing overhead applied ÷ 140%).

(e) $133,000 (Manufacturing overhead applied).

(f) $336,700 [$36,300 + $78,000 + $95,000 + $133,000 – $5,600 (See (g))].

(g) $5,600 [$2,000 + $1,500 + ($1,500 X 140%)].

(h) $153,000 (Given in other data).

(i) $336,700 (Same as (f)).

(j) $347,700 [$153,000 + $336,700 – $142,000 (Given in other data)].

(k) $142,000 (Given in other data).

(l) $111,000 [$95,000 (See (d)) + $16,000].

(m) $111,000 (Same as (l)).

(n) $109,000 [$133,000 + $3,000 (Given in other data) – $11,000 – $16,000].

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